



PT. SINKO PRIMA ALLOY

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1.Summary

1.1 General Description

BB-500 baby incubator integrates advanced technologies of clinical medicine, machinery, computer automatic control, sensors and other disciplines, providing premature and sick infants with an excellent environment of air purification, suitable temperature and humidity, similar to the mother's womb. Air temperature of incubator hood can be set according to the doctor's advice, baby skin temperature and air temperature and humidity with digital display, baby skin temperature and air temperature more than normal or other anomalies (such as power outage, fan stalling, sensor failure, over temperature, temperature deviation, skin temperature deviation, etc.), send out sound and light alarm, to ensure security and reliability of the machine. Nursing infants with white lighting, lighting projection Angle can be adjusted. In the process of use, there is a fault or abnormal situation (such as: power supply interruption, sensor fault, over temperature, temperature deviation), sound and light alarm.

This manual includes two parts: operation manual and technical manual. It is suitable for the installation, use, cleaning, disinfection, maintenance, analysis and troubleshooting of BB-500 series incubator produced by PT.SINKO PRIMA ALLOY.

1.2 Product information

Product information	Manufacturer information
Name: Infant Incubator Model: BB-500 Product category: class I , BF type Waterproof grade: partly IPX4	Name: PT.SINKO PRIMA ALLOY TAMBAK OSOWILANGUN NO.61 PERGUDANGAN OSOWILANGUN PERMAI BLOK E7-E8 SURABAYA - 60191 TLP. 031-7492882.74828816.7482835 sinkoprima@gmail.com teknik.sinkoprima@gmail.com website: http://www.elitech.id

1.3 Intended use and Contraindications

1. Intended use
 - a. Constant temperature culture for premature infants, critically ill infants and weak infants

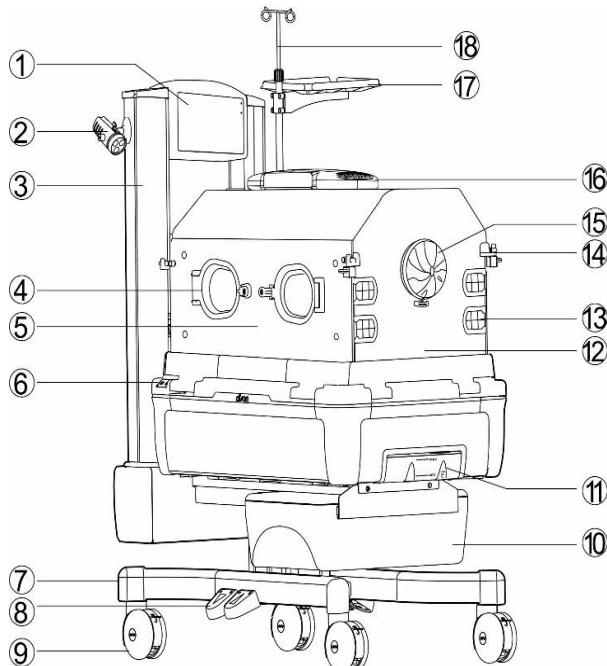
- b. Body temperature resuscitation, infusion, rescue and in-patient observation of premature infants, critically ill infants and weak infant.
- c. Normal babies leaving the mother's body will gradually adapt to the infant incubator to reduce the discomfort caused by environmental changes.
- d. Phototherapy device is used for the treatment of neonatal hyperbilirubinemia.

2. Contraindications

Strictly prohibited to use phototherapy for the baby with body temperature higher than 37.7°C or with increased direct bilirubin.

1.4 Product Structure Composition

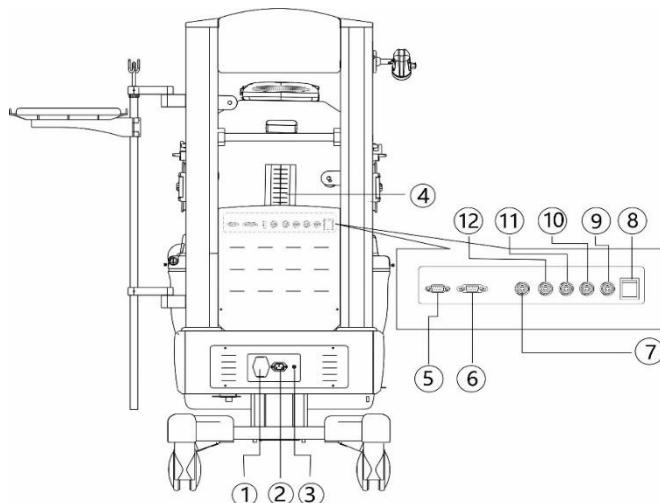
3. General Assembly Drawing



No.	Name
1	LCD Screen

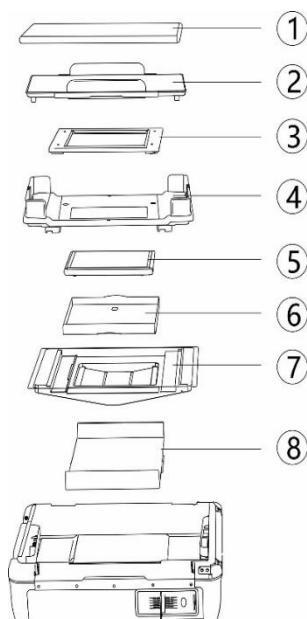
2	LED Observation light
3	Left pole
4	Operating window
5	Left door
6	Button for bed tilt
7	Base
8	Foot pedal for elevator
9	Castors
10	Drawer
11	Humidity facility
12	Hood
13	Infusion seal
14	Lock for door
15	Iris port
16	Upside phototherapy
17	Tray
18	IV pole

4. Connector of functions



No.	Name
1	Power switch
2	Function of socket
3	Earthing terminal
4	Infusion seal
5	RS232 connector
6	Socket for sensor box
7	Socket for downside phototherapy
8	Function switch
9	Socket for Skin 1
10	Socket for Skin 2
11	Socket for Pulse and SPO2
12	Socket for baby scale

5. Internal Assembly Diagram



No	Name	Note
1	Infant bed or gel mattress	When using downside phototherapy, please change the infant bed to gel mattress
2	Upside bed plate	
3	Baby scale	
4	Downside bed plate	
5	Downside phototherapy	
6	X ray cassette tray	
7	Support for bed	
8	Air deflector	

6. Product performance parameters

Main parameters	Power supply	220V/50Hz			
	Power input	1000VA			
	Function of socket	220V/50Hz, 100VA			
	Operating environment	Temperat ure	Humidity	Pressure	Air velocity
		20°C ~30 °C	30%RH~7 5%RH	700hPa ~1060h Pa	<0.3m/s
	Transport and storage	Temperat ure	Humidity	Pressure	
		-10°C ~+55 °C	≤95%RH	500hPa ~1060h Pa	
	Temperature	Air temperature control range	25°C~37°C; 37.1°C~39°C		
		Air temperature display range	5°C~65°C		
		Skin temperature control range	32°C~37°C; 37°C~39°C		
		Skin temperature display range	5°C~65°C		
		Temperature Variation	±0.5°C		
		Temperature display accuracy (resolution)	0.1°C		
		Uniformity of mattress temperature	≤0.8°C		

	Skin sensor accuracy	$\pm 0.3^{\circ}\text{C}$
	Warm up time	$\leq 30\text{min}$
Humidity	Humidity display range	0%RH~99%RH
	Humidity display accuracy	$\pm 1\%\text{RH}$
	Humidity control range	40%RH~95%RH (Humidity Settings should be at least higher than ambient humidity 10%RH)
	Humidity control accuracy	$\pm 5\%\text{RH}$
Oxygen	Oxygen concentration display range	0%~100%
	Oxygen display accuracy	$\pm 3\%$
	Oxygen concentration control range	20%~60%
	Oxygen concentration control accuracy	$\pm 3\%$
Weigh	Weighing range	$\leq 10\text{kg}$
	Weighing accuracy	$\pm 8\text{g}$
SPO2	SPO2 measurement accuracy	In the range of 70% to 100% blood oxygen saturation, the measurement accuracy is $\pm 3\%$
	Pulse rate measurement accuracy	In the pulse rate range of 30 beats/min to 250 beats/min, the measurement accuracy is ± 3
	MAX CO2 concentration in hood	$< 0.4\%$

Internal noise level		$\leq 53\text{dB (A)}$
Phototherapy	Wavelength range	420nm~490nm
	Upside phototherapy max total bilirubin	$3200\mu\text{W/cm}^2$
	Downside phototherapy max total bilirubin	$2300\mu\text{W/cm}^2$
Size	Bed tilt angle	$\pm 12^\circ$ (Infinitely adjustable)
	Height of bed	830~1056mm
	Mattress: LxWxH	410x650x20mm
	Product: LxWxH	658x1180x(1535~1735mm)Without accessories
	Product: LxWxH	845x1180x(1535~1735mm)With accessories
Weigh		142Kg
Safety performance	Power failure alarm	●
	Fan failure alarm	●
	Sensor failure alarm	●
	Temperature deviation alarm	●
	Over temperature alarm	●
	Water lack alarm	●
	Second heating cut off device	●

2. Definition and Symbol

2.1 Definition

1. Air temperature control

The air temperature in the incubator is automatically controlled by the air temperature sensor to the temperature value set by the user.

2. Skin temperature (infant temperature) control

Skin temperature control mode can automatically control the temperature in the hood of incubator, so that the temperature measured by the skin temperature sensor is close to the temperature value set by the user.

3. Incubator temperature

Air temperature refer to 10cm above the center of the infant mattress surface in hood.

4. Control temperature

The temperature set on the temperature controller (the required temperature in the baby cabin).

5. Skin temperature sensor

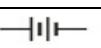
A sensor that measures skin temperature for baby.

6. Skin temperature

The temperature at which a skin temperature sensor is placed on the baby's skin.

2.2 Symbol

Symbol	Note
	Power switch on
○	Power switch off
●○	Function switch on
○●	Function switch off
♪	Sound pause button

	The application part of BF
	Name and address of manufacturer
	Production date
	Read the documents
	High temperature warning
	Earthing protection
	Voltage danger
	Fuse
	DC
	AC
	Two-way rotation
	Battery
	Balanced grounding terminal
	During phototherapy, the baby must be protected with an eye mask
	Machine rising pedal
	Machine descending pedal
	Bed left tilt button

	Bed right tilt button
	Function menu key
	Main screen
	Return to the previous menu
	Trend
	Downside phototherapy
	Weighing
	Air circulation culture
	Air mode
	Skin mode
	Humidity mode
	On-off status of the screen
	Oxygen inlet
	Temperature
	Auxiliary temperature
	The key to set above 37°C

	Heart rate and SPO2
	System function selection
	Lock key
	Silence key
	Temperature difference between skin temperature 1 and skin temperature 2
	Open
	Close
	Function calibration
	Weight reset
	Weight increment reset
	Clear key

3. Dangers, Warnings and Cautions

To ensure use this equipment safely, please follow the manual instructions; this device should only be used by trained personnel under the guidance of qualified medical personnel familiar with the risks and benefits commonly known in the use of incubators.



This product is not sterilized when shipped, please be sure to wash and sterilize it for the first time after purchase.



This product sucks the outside air and warms it up to keep the temperature of the baby's surroundings. It does not have the ability to cool the outside air, ensuring that the air temperature of the incubator is at least 3 °C higher than the ambient temperature; Or some other heat generating device is used with the incubator, it is recommended to set the air temperature 5 °C higher than the ambient temperature. If a lower temperature is set, the incubator control may not be accurate.

3.1 Dangers

1. Baby Incubator is not AP/APG type equipment. If the user is equipped with an instrument for oxygen delivery, please pay special attention:
 - 1) An oxygen analyzer must be provided during oxygen delivery and an oxygen hood is recommended, please refer to the oxygen analyzer instruction manual and similar documents.
 - 2) When supply oxygen, the risk of fire is increased. At this time, auxiliary equipment that generates sparks must not be placed in the incubator. The phototherapy lamp switch must be turned off before using oxygen.
 - 3) When oxygen is connecting, even a small amount of flammable agents such as ether and alcohol can remain in the incubator and cause a fire.
 - 4) Oxygen delivery operation will increase the noise level for babies in the incubator.
 - 5) Do not put warmers, flashlights, grease, flammable or explosive materials in the incubator.
 - 6) Cotton for baby clothes, sheets, etc.
 - 7) The clothing of doctors, nurses and ambulances handling this equipment should be made of cotton or fire-resistant materials.

Severe spontaneous combustion may occur if oil, grease, or grease-like substances come in contact with pressurized oxygen. Do not stick these substances to parts of oxygen supply equipment

such as oxygen pressure regulators, oxygen cylinder valves, pipes, joints, etc.

- 8) On high-pressure oxygen cylinders, only use tested pressure reducing valves or pressure regulating valves designed specifically for oxygen supply. Do not use this valve for any gas other than air or oxygen. It is dangerous to use a valve to supply gas other than air or oxygen.
- 9) If the oxygen battery is damaged, the electrolyte inside the oxygen battery may leak. If you come in contact with the electrolyte, rinse it off immediately with plenty of water.
2. Do not use the equipment in the presence of flammable anesthetic gas. When use in the presence of this gas, the device may cause an explosion or fire.
3. AC power must be single-phase three-wire system, and the ground must be reliable.
4. The incubator is a Class I, BF type application equipment, the additional equipment connected to the baby must be safe.
5. Do not place or use materials that produce harmful gases or dust in the hood.
6. When auxiliary equipment uses output sockets, the rated power of the load must not exceed the output socket rating
7. Monitor baby's skin temperature while operating the device.
8. Do not leave the unit unattended when the door or operation window is open.
9. Even if stop using the equipment, please seek repairs immediately if you find any trouble with the door or operation window. The baby may fall out of the baby's cabin.
10. Do not use when there is device generates high frequencies near this equipment.

To prevent the equipment from malfunctioning due to interference, when the equipment is working, do not use electric scalpels, portable and mobile communication equipment that generate high-frequency near the equipment.

3.2 Warnings

1. Touching the power plug with wet hands may cause electric shock.
2. Do not touch the heater during or shortly after use.

3. Do not disassemble or modify this equipment.
4. Disassembly or modification of the device may cause fire, electric shock or injury.
5. The rated power of this unit as below:
AC220V; power consumption 710 VA; frequency 50 / 60Hz;
working voltage range AC220V ± 10%
6. Do not connect this equipment to other power sources.
7. Be sure to check the device every morning.
8. Operating the device without inspection at the beginning of each day may cause defects to be ignored and lead to potentially adverse results.
9. The incubator should work in a clean, small changes of temperature and humidity environment place.
10. This equipment is a general device that runs continuously
11. When a function of the incubator is lost or malfunctioned, the cultivation and treatment should be terminated immediately and turn off the power, repairs should be performed by maintenance personnel who is approved and authorized by the company.

3.3 Cautions

1. In incubator mode, shall pre-warm the equipment to keep the temperature inside the hood stable.
2. Put the baby in the incubator after the temperature is stable
3. When the power is not connected, do not turn on the power switch for a long time, otherwise a power failure alarm will occur and the battery power will be lost.
4. Do not block the air outlet and air inlet of the hood.
5. Operation Condition is under the environment temperature is 20 ° C to 30 ° C and the environment relative humidity is 30% RH to 75% RH. Do not use the incubator if the environmental conditions cannot meet the requirements.
6. Lock the casters when using the incubator to prevent the equipment from moving.
7. When the door is closed, the two handles should be rotated into place to catch the positioning slot.
8. The incubator's power supply adopts for F5AL 250V fuse tube. When replacing, the power plug must be unplugged to ensure power failure.

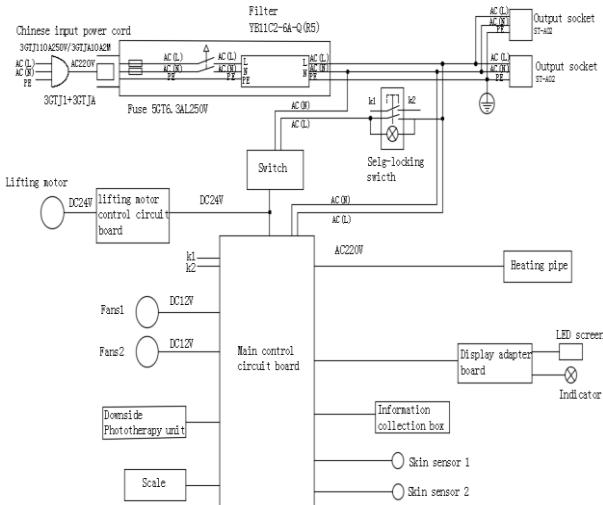
9. The air purification filter should be inspected and cleaned on time to avoid poor air intake and increase the carbon dioxide concentration in the baby cabin.
10. The surface of the Plexiglas hood and phototherapy unit must not be scrubbed with organic solvents such as alcohol, the Plexiglas hood must not be exposed to ultraviolet radiation directly.
11. Infant bed load: The total weight of infant and items on the bed should not exceed 10Kg.
12. When the instrument is abnormal, don't use it, wait for the professional finding out the reason and solve the problem.
13. The control circuit of the incubator is connected with a relay, which will generate a small amount of electromagnetic radiation during working. When using other auxiliary equipment, good grounding and shielding measures are recommended.
14. Remove the power plug from the power outlet before cleaning and disinfecting the equipment.
15. Electric wires or infusion tubes cannot pass through upside of the hood.
16. When moving the equipment, watch out your footsteps to avoid your feet are crushed by the casters.
17. Provide eye protection to patients as long as the patient's eyes may be exposed to radiation from the phototherapy unit.
18. Warning! The operator may be affected if operator is in the irradiation area of the phototherapy unit for too long time.
19. Protective devices (such as bed, front doors, etc.) intended to prevent the patient from leaving the effective surface area must be checked regularly for safety functions.
20. Changes (such as temperature, different radiation sources, etc.) in the surrounding environmental conditions of the patient will affect the treatment effectiveness. It is recommended to use the skin temperature control mode when cooperating with the baby incubator, otherwise the set temperature value must be reduced according to the baby's skin temperature measurement
21. Do not use the phototherapy unit alone when the incubator is not working.
22. Due to the actinic effect of drugs, it is forbidden to store drugs and injections in the radiation area
23. Do not use the phototherapy unit in the presence of combustion-supporting gases (such as Oxygen, nitric oxide, anesthetic gas)

24. The safety requirements of equipment auxiliary devices shall comply with GB 9706.1-2007 medical electrical equipment. Part 1: General safety requirements.
25. The disposal of product waste must comply with the policy of laws and regulations.
26. Do not use the equipment in the environment with portable and mobile RF communication device, otherwise it will affect the normal operation of the product.
27. The lifetime of the baby incubator is 8 years, and the lifetime of the upside and downside phototherapy unit is 6 years. When the lifetime expires, the product should be disposed. The disposal of product waste must comply with the policy of laws and regulations.

4. Working Principle

4.1 Principle of hood and air convection circulation system

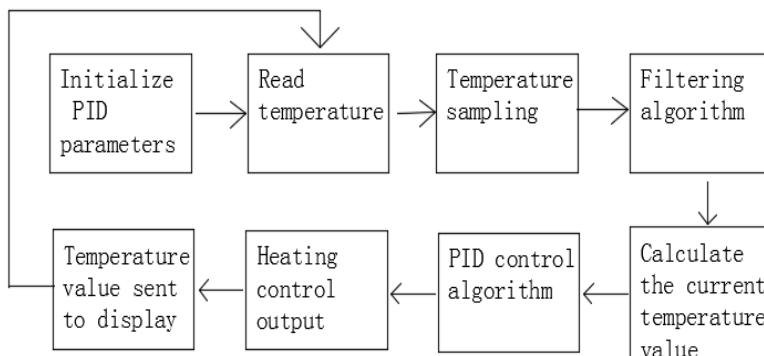
The baby hood is divided into two upper and lower layers, and a rectangular hole is formed at the two sides of the baby hood which will form an air convection circulation system. The lower layer is equipped with a axial flow fan, electric heating tube and water tank, the upper layer is equipped with a hood cover and a baby bed that can be easily removed. Driven by an axial flow fan, the air with heat and moisture is circulated in the baby's hood to achieve a temperature and humidity balance. In the negative pressure space of the axial flow fan, a hole with a diameter of about 13mm is opened so that a small amount of air outside the baby box is purified and enters the baby box. The air outlet on the top of the Plexiglas thermostat of the baby hood and the air outside the baby hood form a circulation to achieve the purpose of CO₂ does not exceed the standard.



Circuit principle (Figure 1-1)

DC stabilized power supply: 3.3V single-chip microcomputer and integrated circuit, 12V power for relay, 5V buzzer. 9V built-in battery power: alarm power when power is interrupted.

Heating control: composed of photoelectric coupling manifold, thyristor, 550W electric heating tube. Alarm: buzzer and horn.



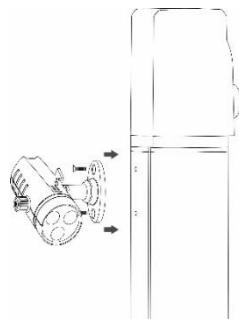
5. Preparation before assembly and use

Before using the equipment, please carefully install and check according to the following instructions to ensure that the resuscitator can work normally.

5.1 LED observation light installation, adjustment and power cord connection

1) LED observation light Installation

As shown in the figure, remove the two M5 fixing screws at the corresponding positions of the left column with a Phillips screwdriver, and then unpack the LED light and fix it in the corresponding position according to the direction shown in the figure. Please do not press the power cord when fixing.



2) Power cord connection

Insert the power plug into the 12V, 0.5A socket which is behind the post

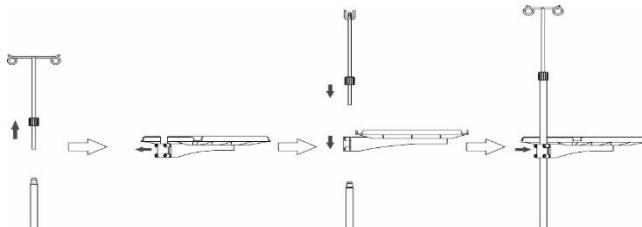
3) Angle adjustment

Hold the lamp head and rotate to the desired use angle.

5.2 Tray installation, infusion device, I.V. pole, infusion hook adjustment

1) Tray installation

As shown in the figure, release the fixing nut of the I.V. pole until it is loosened, unplug the infusion hook, then loosen the M6 hexagonal screw at the corresponding position of the tray (no need to remove it), and put the tray into the appropriate position of the I.V. pole. Use a wrench to fix it and adjust it to the proper position and angle to tighten it.



2) I.V. pole adjustment

There are two methods to adjust the I.V. pole position as below:

- a) The infusion device is turned up or down.

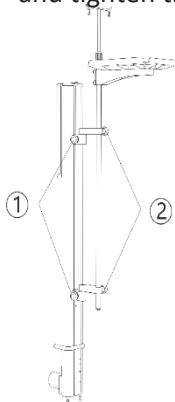
As shown in the figure, release the two screws on the infusion device. At this time, the entire infusion device can be raised or lowered on the slide rail, then tighten the screw after adjusting to the proper position.

- b) Adjust the I.V. pole up or down

Loosen the two screws on the outside of the infusion device. The I.V. pole can slide up and down. Adjust to the proper position and tighten the screws.

3) Adjustment of the infusion hook

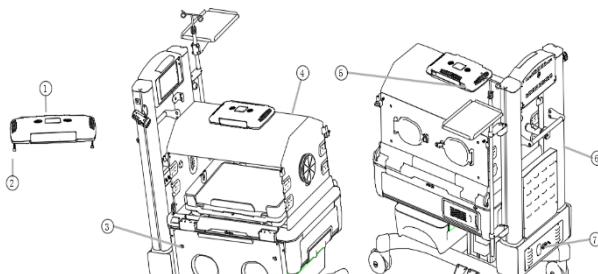
As shown in the figure, loosen the infusion hook nut. At this time, the infusion hook can be extended. Adjust the position and tighten the nut.



No.	Item
1	Thread handle
2	External thread handle

5.3 Installation of upside LED phototherapy

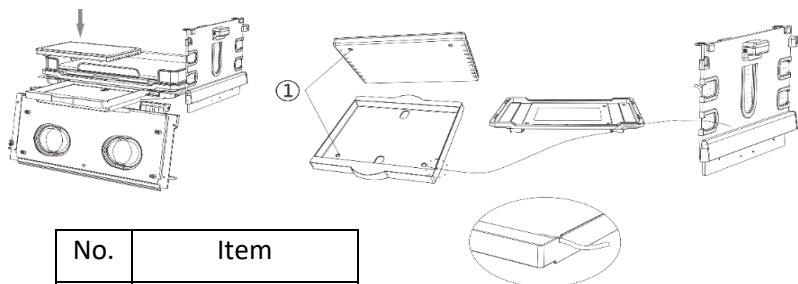
- 1) As shown in the figure, unpack the phototherapy unit package, take out the light box part, and take off the M4 threaded handles on the two ends of the light box.
- 2) Place the light box above the hood, open the front door of the hood then pass the two threaded handles through the corresponding holes on the inside of the hood. And finally tighten the threaded handles to ensure that the light box is firmly fixed on the hood.
- 3) Take out the power cord from the package, plug one end into the input socket on the back of the light box, then bypass the power cord from the top of the hood, pass between the two posts, and finally plug the other end into the functional socket of the incubator, Function socket input voltage 220V, 50 / 60Hz, input power 100VA.



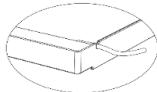
No.	Item
1	Light box
2	Threaded handle
3	Front door
4	Hood
5	Upside phototherapy input socket
6	Stand
7	functional socket

5.4 Installation of downside LED phototherapy

- 1) As shown, open the right hood door and pull the X-ray box from the inside of the lower bed tray.
- 2) Place the two positioning posts under the blue light corresponding to the two positioning holes of the film box.
- 3) Put the phototherapy unit control line into the wire slot on the side of the film box, cross the line along the edge of the bed, and thread out from the large infusion seal of the hood. Finally, connect the plug with the corresponding socket on the control box.

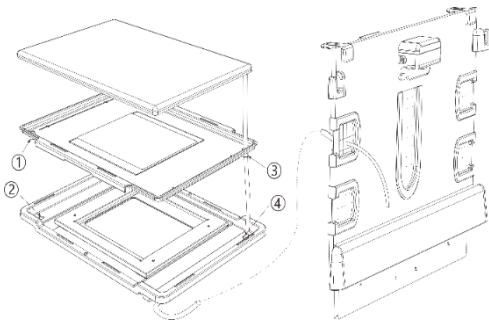


No.	Item
1	Fitting the hole



5.5 Installation of weighing parts, Connection of control line

- 1) As shown in the figure, remove the upper bed tray and pass the weighing signal line through the wire hole of the lower bed tray.
- 2) Align the two positioning posts at the bottom of the weighing component with the two positioning holes corresponding to the lower bed tray.
- 3) Align the four sides of the underside of the upper bed tray with the square holes in the middle of the weighing unit.
- 4) Operate the weighing signal cable along the wiring shown in the figure, and finally
- 5) insert the signal cable into the control box socket on the back of the incubator.



No.	Item
1	Light box
2	Threaded handle
3	Front door
4	Hood

5.6 Installation position of equipment

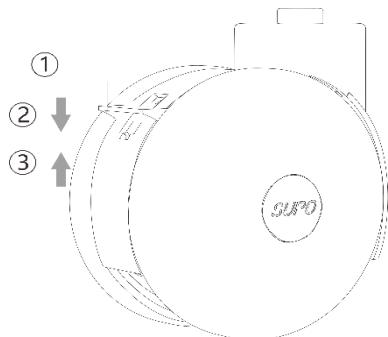
Install the incubator on a flat and convenient location on the floor.

Avoid installing it near a heater, near a window, or a place where fire is used. These may damage the incubator or cause a fire.

Avoid installing the incubator in direct sunlight, near a stove or radiator, in the direct airflow of an air conditioner, or near a cold window to avoid being directly affected by such external thermal conditions.

5.7 Lock casters

Install the incubator in the required position and lock the casters. If you want to lock the casters, press down the lock switch with your feet. If you want to open the casters, lift the lock switch with your toes.



No.	Item
1	Brake block
2	Lock
3	Unlock

5.8 Power cord socket and protective ground

The power outlet should be close to the incubator to prevent accidental dragging of the power cord. Use a separate outlet for each device.

Do not place multiple devices on the same outlet. For safety grounding, connect the power cord to a properly grounded 3P power outlet. If there is a problem with grounding, do not operate the equipment. Grounded peripherals should be safe.

The rated voltage of this equipment: AC220V, power 710VA, frequency 50 / 60Hz, working voltage range AC220V ± 10%, do not connect this machine with other power sources.

5.9 Power cord and power switch

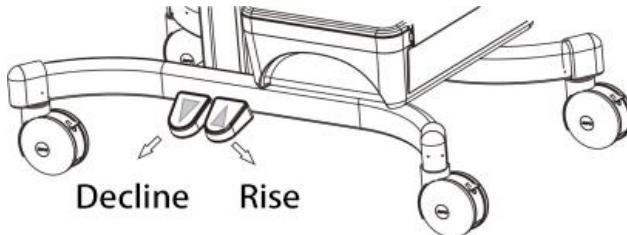
- 1) Connect one end of the power cord to the power socket at the back of the incubator, and then connect the power plug at the other end to the power outlet.
- 2) Turn on the main switch.
- 3) Turn on the power switch of the machine.

Even if the power is turned off or the power supply should be interrupted, pre-selected settings and displayed items will remain in memory due to a power failure, disconnected power plug, or other reasons. When power is restored, the settings and display items last selected will be displayed and work will begin.

5.10 Adjust the height of the subject

The foot switches on both sides below the base of the incubator can control the lifting of the whole machine.

If you want to raise the device, step on the icon identification pedal; if you want to lower the device, step on the icon identification pedal



5.11 Power failure alarm

If the power switch does not issue a power failure alert when disconnecting the power cord and turning on the power switch after charging, please contact the manufacturer.

6.LCD display screen

6.1 Home screen

(1) Overall regional division

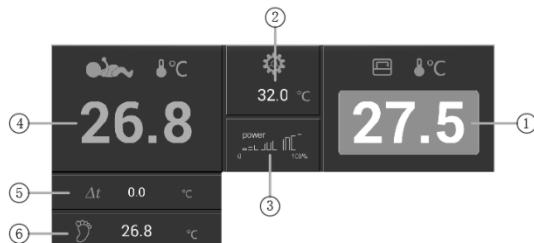


No.	Item
1	Virtual warning light area
2	Temperature zone
3	Oxygen concentration area

4	Weight zone
5	Menu
6	Pulse and Spo2 area
7	Humidity area
8	Alarm information display area
9	Baby ID area

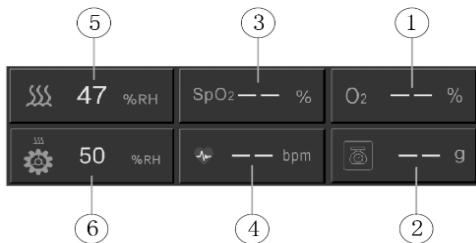
(2) Detailed description of relevant areas

a) Temperature area



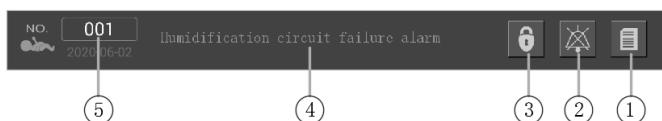
No.	Item
1	Current display value of air temp
2	Air temp/skin temp setting value
3	Heating power display bar
4	Skin temp 1 current display value
5	Skin temp1&Skin temp 2 display difference
6	Skin temp 1 current display value

b) Weight, humidity, oxygen concentration, heart rate and blood oxygen saturation zone



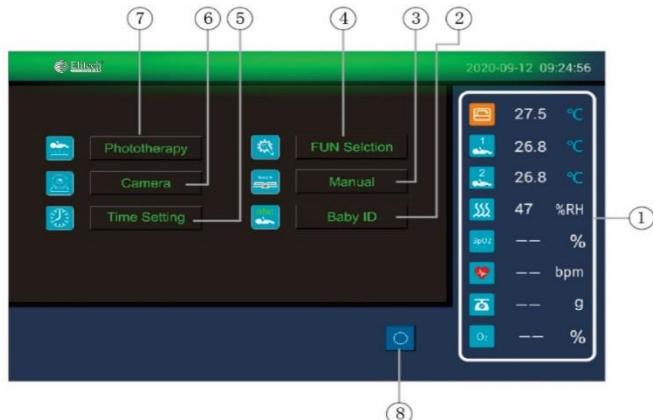
No.	Item
1	O2 current display value
2	Weight display value
3	SpO2 current display value
4	Pulse display value
5	Humidity display value
6	Humidity Setting value

c) Baby ID, Alarm information, Menu



No.	Item
1	Menu key
2	Silence key
3	Screen lock key (When operating on the screen, first click this button to unlock the screen, and the screen will automatically lock if there is no operation for 2 minutes)
4	Alarm information display
5	Baby ID

6.2 Function menu interface



No.	Item
1	Function parameter real-time display area
2	Baby ID input function key
3	User manual function keys
4	System setting button
5	Time setting button
6	Video function keys
7	Phototherapy function keys
8	Back

6.3 Control mode selection and skin temperature setting interface



No.	Item
1	Current skin temp/air temp setting value
2	Temperature setting keyboard
3	Skin temperature control mode
4	Air temperature control mode
5	$> 37^{\circ}\text{C}$ setting
6	$< 37^{\circ}\text{C}$ setting
7	Back
8	Enter

6.4 Skin temperature curve view interface



No.	Item
1	Current skin temp setting value
2	Skin temp 1 curve color indicator
3	Skin temp 2 curve color indicator

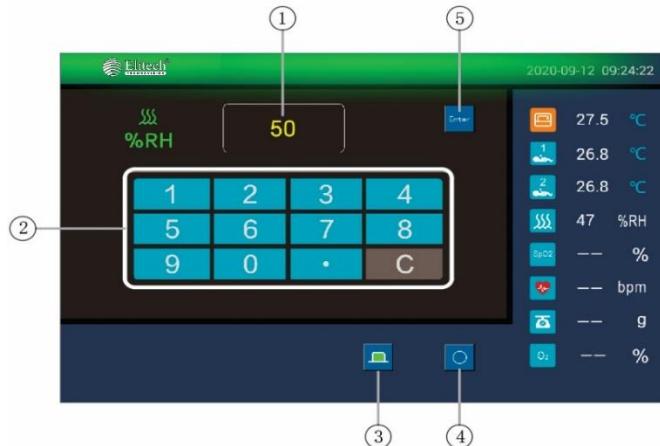
4	Temperature coordinates
5	Time coordinates
6	History time
7	Retreat
8	Forward
9	Back

6.5 Air temperature curve view interface



No.	Item
1	Current air temp setting value
2	Temperature coordinates
3	Time coordinates
4	History time
5	Retreat
6	Forward
7	Back

6.6 Humidity Setting Interface

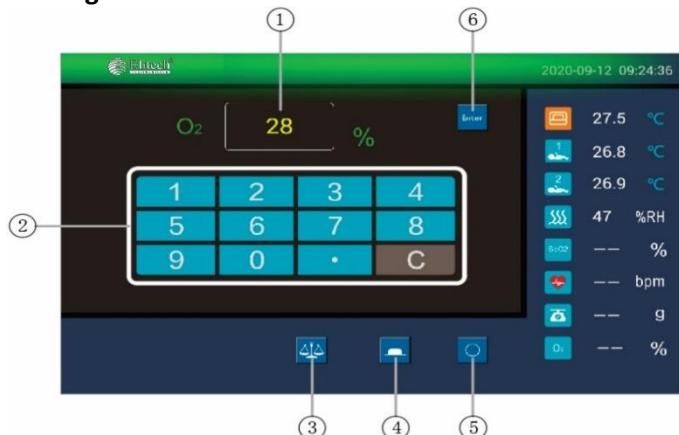


6.7 Humidity temperature curve view interface



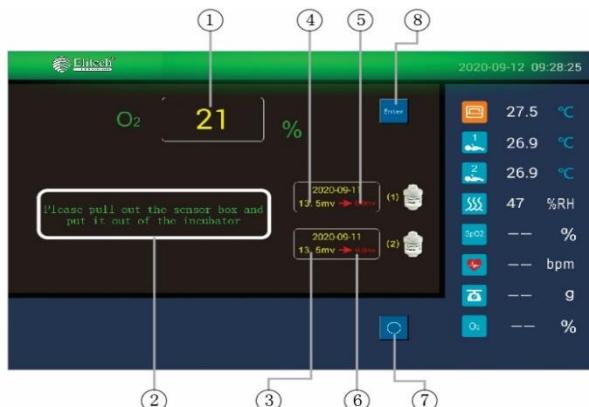
No.	Item
1	Humidity setting value
2	Humidity coordinates
3	Time coordinates
4	History time
5	Retreat
6	Forward
7	Back

6.8 O2 Setting Interface



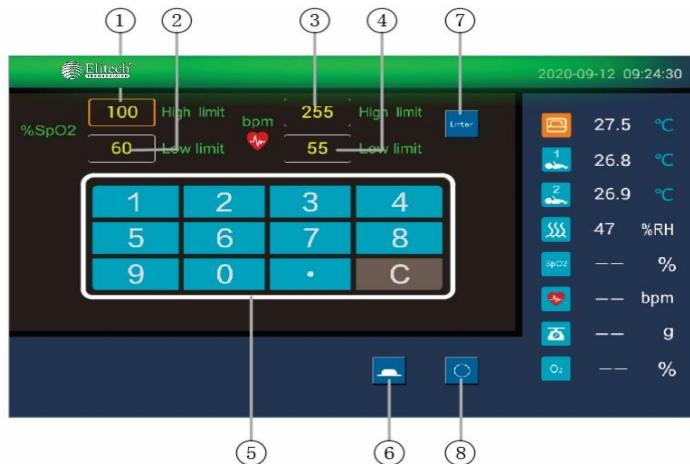
No.	Item
1	Current O2 setting value
2	O2 setting keyboard
3	Oxygen concentration calibration function key
4	SpO2 alarm switch
5	Back
6	Enter

6.9 O2 concentration calibration interface



No.	Item
1	O2 concentration calibration value
2	Calibration prompt message
3	Current oxygen control battery voltage
4	Current oxygen battery voltage
5	Oxygen control battery voltage threshold
6	Oxygen battery voltage threshold
7	Back
8	Enter

6.10 Pulse and SpO2 setting interface



No.	Item
1	SpO2 alarm high limit setting value
2	SpO2 alarm low limit setting value

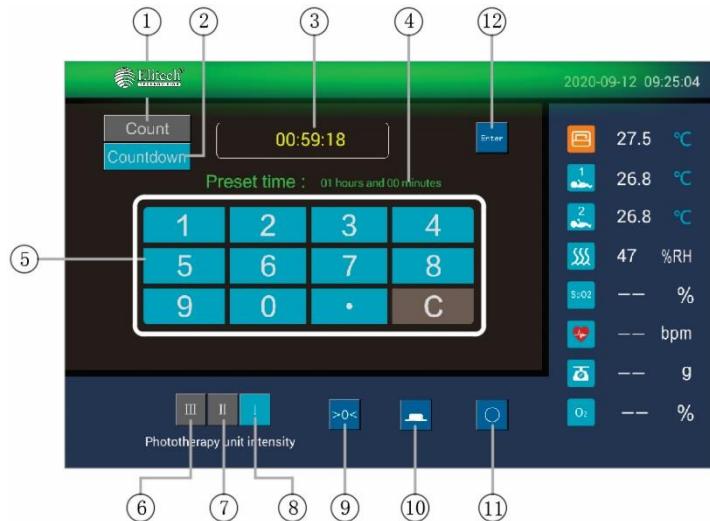
3	Pulse alarm high limit setting value
4	Pulse alarm high low setting value
5	Set key
6	Function switch
7	Enter
8	Back

6.11 Weighing interface



No.	Item
1	Real-time weight
2	Weight gain
3	Weight coordinate
4	Time coordinate
5	History time
6	Retreat
7	Forward
8	Weight function switch
9	Weight reset
10	Zero weight gain
11	Back

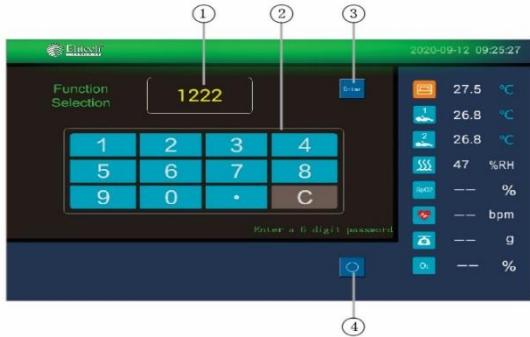
6.12 Downside Phototherapy operation interface



No.	Item
1	Count mode
2	Count down mode
3	Count/Count down time
4	Count down time setting
5	Set key
6	High-range brightness
7	Mid-range brightness
8	Low-range brightness
9	Timer reset
10	Phototherapy switch
11	Back
12	Enter

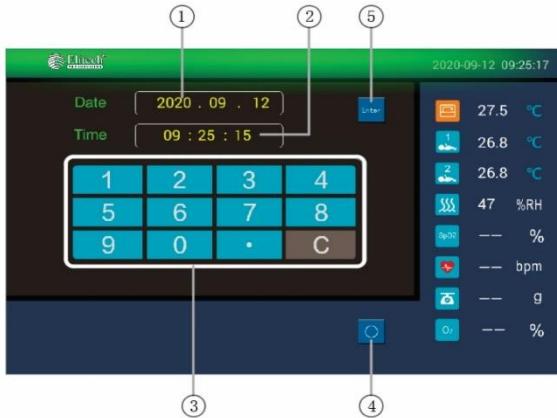
6.13 System setting menu interface

Note: After clicking the system setting button, enter the password to enter the system setting.



No.	Item
1	6-digit password
2	Set key
3	Enter
4	Back

6.14 Time setting interface



No.	Item
1	Year /month /day
2	Hours/ minutes/seconds
3	Set key
4	Back
5	Enter

6.15 Function selection interface



No.	Item
1	Air temperature calibration function key
2	Skin temperature calibration function key
3	Humidity temperature calibration function key
4	Weighing temperature calibration function key
5	Restore to factory settings
6	Over temperature test
7	Fan test
8	Function &language selection
9	Heating circuit detection
10	PID parameter adjustment
11	Back

7.The using of machine

7.1 Air temperature/skin temperature control and place the infant in incubator

This machine adopts two kind of thermostat temperature control methods: Air temperature control and skin temperature control. In the Air temperature mode, the heater output is controlled to reach the pre-selected incubator air temperature. In the Skin temperature control mode, the skin temperature probe is connected to the baby and the heater output is controlled to keep the baby's skin temperature at a pre-selected level.



Practice and master the operating procedure before placing the baby in the incubator. When the incubator is empty, after setting the temperature and allowing the temperature to stabilize in the incubator, then place the baby.



When the baby is in the incubator, the output of the heater, the air temperature of the incubator, the relative humidity, and the oxygen concentration should be continuously checked.



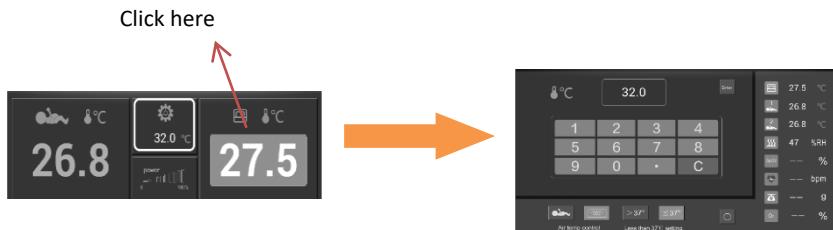
Check whether the air inlet and outlet are blocked by diapers, gauze and other obstacles. If it is blocked, the temperature and relative humidity of the incubator cannot be controlled properly, which will cause danger to the baby in the incubator.



Do not cover the sensor part of the information transmission incubator with cloth, etc., otherwise it will affect the temperature and relative humidity measurement inside the incubator.

1. Incubator temperature setting

(1) Select the control mode and change the set temperature
As shown in the figure, click on the temperature setting area on the main screen



Click the incubator temperature control button , and the incubator will switch to the incubator temperature control mode at this time, and set the desired incubator temperature. After the setting is completed, click  to complete the incubator temperature setting.

The temperature of the incubator is displayed in increments of 0.1°C within the range of 10~42°C; the temperature range of the incubator can be set: 25~37°C, if you need the range of 37.1~39.0°C, click the  button as shown in the figure.



Make sure that the air temperature of the incubator is at least 3°C higher than the ambient temperature; if a heated humidifier or some other heat generating device is used with the incubator, it is recommended to set the air temperature of the incubator 5°C higher than the ambient temperature. If you set a lower temperature, the incubator control may not be accurate.

2. Place the baby in the incubator

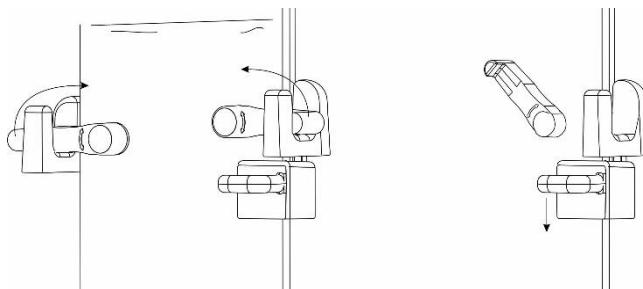


Only after the temperature in the incubator is stable, then can put the baby in it. Note: When the air temperature equal or close to the set value, the temperature of the incubator is regarded as stable.

As shown in the figure, turn the manual locking knobs on both sides of the thermostat door to turn it counterclockwise to unlock, and then press the self-lock button of the thermostat door to open the thermostat door.

Pull out the tray and place the baby in the middle of the mattress.

Close the thermostat door and turn the manual locking knobs on both sides clockwise to the end to lock the thermostat door.



 During normal use, do not open the thermostat door, as this will reduce the air temperature in the infant compartment.

 Do not place heavy objects (including babies) of 10Kg or more on the mattress.

3. Skin temperature monitoring

The device is equipped with two skin temperature sensors to monitor the skin temperature of the baby placed in the incubator. The skin temperature sensor socket is located on the power box at the back of the incubator, there are two skin temperature sensor sockets on the power box. The skin temperature monitored by the skin temperature sensor connected to skin temperature 1 is displayed on the touch screen in a large size; The skin temperature monitored by the skin temperature sensor connected to skin temperature 2 is displayed on the touch screen in a small size.

 In skin temperature control mode, the skin temperature sensor connected to skin temperature 1 is used as an automatically controlled surface temperature probe; The skin temperature sensor connected to skin temperature 2 cannot be used for automatic control.

7.1.3.1 Skin temperature monitoring

(1) As shown in the figure, connect the blue skin temperature sensor plug to the skin temperature 1 of the power supply box on the rear side of the incubator.

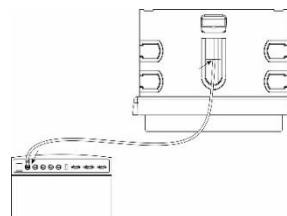
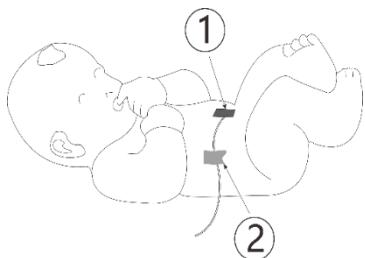
(2) Pass the skin temperature sensor's wire and probe from the large infusion at the back of the incubator and seal it through the incubator.

(3) Before attaching the skin temperature probe to the baby, wash the baby's attachment area with alcohol or warm water to remove any dirt.

(4) Place the blue skin temperature sensor probe at the highest position near the baby's navel. The heat-sensitive surface (metal part) should contact the skin. Stick a piece of tape slightly away from the tip of the probe and secure the probe to the skin.

(5) The temperature detected by the blue skin temperature sensor probe will be displayed on the skin temperature 1 in the temperature area of the display screen.

(6) After connecting the skin temperature sensor for several minutes, after the temperature reading is stable, the skin temperature sensor performs temperature monitoring on the baby.



No.	Item
1	Skin temperature Sensor probe
2	Adhesive tape



Do not place the skin temperature probe under an infant.



Do not use it as a rectal probe.



When the baby is in the lateral position, follow the doctor's instructions to operate the skin temperature probe.

7.1.3.2 Monitoring skin temperature in two different locations

- (1) Connect the blue skin temperature sensor to skin temperature
- (2) Connect the green skin temperature sensor to skin temperature
- (3) Connect the two skin temperature sensors to the baby's skin surface in the same way.

(4) The temperature monitored by the blue skin temperature sensor is displayed in the temperature area of the display screen in a large size.

(5) The temperature monitored by the green skin temperature sensor is displayed in the temperature area of the display screen in a small size.



The skin temperature probe must be attached to the baby's skin very carefully. If it is incorrectly attached or accidentally detached from the baby, the baby's skin temperature cannot be accurately detected, especially in the skin temperature control mode, which will cause the risk of overheating.

4. Skin temperature setting (Skin temperature control mode)

In the skin temperature control mode, the temperature control of the incubator is mainly to maintain the baby's skin temperature. It uses a skin temperature probe attached to the baby's abdomen to detect the baby's skin temperature, and maintains the optimal thermal environment through feedback control. In the skin temperature control mode, the temperature of the incubator is automatically controlled to keep the baby's skin temperature at a constant level; If the baby's skin temperature is lower than the set temperature, the temperature of the incubator will rise. If the baby's skin temperature is higher than the set temperature, the temperature of the incubator will drop.



First in the box temperature control mode, after the temperature in the box reaches a stable state, the baby is placed in the incubator, and then the skin temperature control mode is started.

- (1) Connect the blue skin temperature sensor plug to skin temperature 1 of the power supply box on the back of the incubator.

- (2) Pass the skin temperature sensor's wire and probe from the large infusion at the back of the incubator and seal it through the incubator.
- (3) Before attaching the skin temperature probe to the baby, wash the baby's attachment area with alcohol or warm water to remove any dirt.
- (4) Place the blue skin temperature sensor probe at the highest position near the baby's navel. The heat-sensitive surface (metal part) should contact the skin. Stick a piece of tape slightly away from the tip of the probe and secure the probe to the skin.
- (5) The temperature detected by the blue skin temperature sensor probe will be displayed on the skin temperature 1 in the temperature area of the display screen.
- (6) After connecting the skin temperature sensor for several minutes, after the temperature reading is stable, the skin temperature sensor performs temperature monitoring on the baby.
- (7) Set the skin temperature control mode (refer to the box temperature control mode for the specific setting method): Follow your doctor's advice to set the skin temperature to the required level, skin temperature setting range: 32 °C ~ 37 °C, if you need the range of 37.1 ~ 38.0 °C, as shown in the figure, click button . When the setting is complete, touch the switch to close the information window.



Do not place the skin temperature probe under an infant.



Do not use it as a rectal probe.



When the baby is in the lateral position, follow the doctor's instructions to operate the skin temperature probe.



The skin temperature probe must be attached to the baby's skin very carefully. If it is incorrectly attached or accidentally detached from the baby, the baby's skin temperature cannot be accurately detected, especially in the skin temperature control mode, which will cause the risk of overheating.



If the skin temperature probe is covered with a blanket, diaper or baby's arm, or if the skin temperature probe is soaked with baby's urine or some medical fluid, the skin temperature cannot be accurately detected.



In the skin temperature control mode, if the baby spontaneously heats, it may cause the temperature of the incubator to drop, or have other adverse effects on the baby.



In skin temperature control mode, be sure to connect skin temperature 1 to skin temperature socket 1. The skin temperature 1 probe is used as an automatically controlled probe. In order to monitor the skin temperature of two different parts of the baby at the same time, the green skin temperature sensor is connected to the skin temperature socket 2 (without automatic control, only for monitoring).

5. Temperature curve view

1) View of air temperature curve

As shown in the figure below, click the air temperature display area to enter the air temperature curve viewing interface, and the interface displays the current temperature curve;



The ordinate of the figure is the temperature axis, and the range of the axis is $25^{\circ}\text{C} \sim 40^{\circ}\text{C}$; the abscissa is the time axis, and the current display time range is 12 hours;

If you need to view the historical temperature records, click the forward or back button at the lower left corner of the air temperature curve screen to view the temperature curve at a specific time. When

viewing the historical records, the time range of the abscissa is 24 hours. Each time you switch to a new time, the curve will be displayed with a delay of 1 second, and the temperature records of any day within 30 days can be viewed.

2)Skin temperature curve view

As shown in the figure below, click the skin temperature display area to enter the skin temperature curve viewing interface, and the interface displays the current temperature curve;



The ordinate of the figure is the temperature axis, and the range of the axis is 25°C~40°C; the abscissa is the time axis, and the current display time range is 12 hours;

If you need to view the historical temperature records, click the forward or back button at the lower left corner of the skin temperature curve screen to view the temperature curve at a specific time. When viewing the historical records, the time range of the abscissa is 24 hours. Each time you switch to a new time, the curve will be displayed with a delay of 1 second, and the temperature records of any day within 30 days can be viewed.

7.2 Humidity control



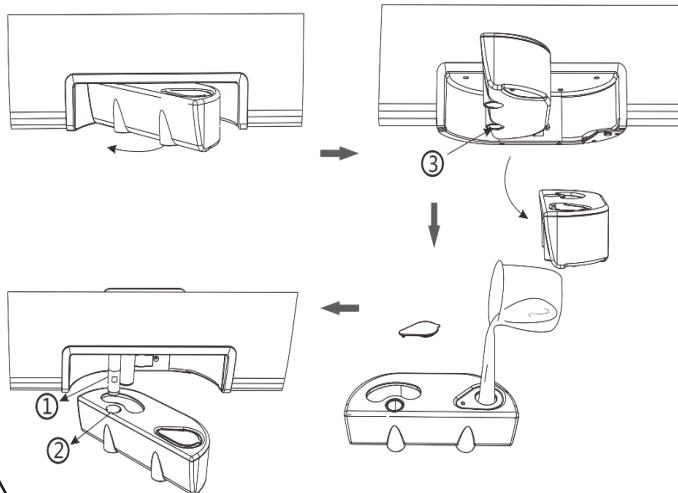
Humidity control must be performed after the temperature of the incubator has stabilized, and you must follow the doctor's instructions in terms of humidity control.

6. Increase the distilled water

- (1) As shown in the figure, one hand pulls the open position at the bottom right of the water tank and rotates it 90 degrees

clockwise. The other hand presses the lock button at the bottom left of the water tank and slowly removes it while holding it.

- (2) Remove the water tank cover, fill the water tank with sterile distilled water, and close the water tank cover.
- (3) Hold the water tank by hand, align the positioning hole on the top of the water tank with the corresponding rotation axis, push the water tank up to the end, and then rotate it 90 degrees counterclockwise to complete the installation of the water tank.



Make sure that the water injected into the water tank is distilled water.



When changing water, make sure that the water in the water tank is sufficiently cooled to avoid burns.



Do not leave any water in the water tank except during the humidification process.



When the water tank is detached from the incubator or not installed in place, the display will display a water shortage alarm and the incubator cannot be operated.



To prevent microbial reproduction and contamination of the humidification system, empty the water tank every 24 hours and refill the water tank with fresh distilled water.

7. Humidity setting

As shown in the figure below, click the humidity setting area on the main screen to switch to the humidity setting interface.



Set the relative humidity to the desired level; if you want to turn off the humidity function, click the button to turn on or off the humidity function; when the humidity is off, the main screen will be displayed like this 50 %--.

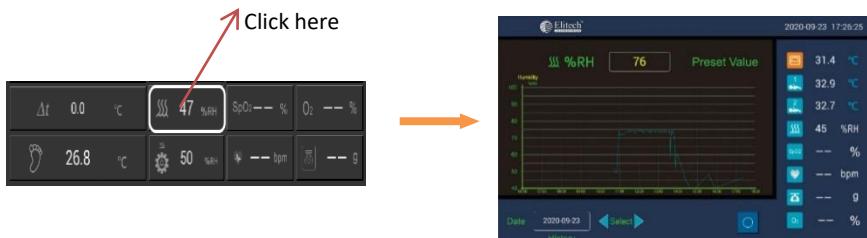
When the water level is low or the humidity fails, the alarm information display area of the display screen will display the corresponding alarm information. If this information appears, you need to remove the water box, add sterile distilled water or overhaul the humidification system.



Be very careful when changing the water. The round heating rod inside will be very hot. Be careful not to touch it.

8. Humidity curve view

As shown in the figure below, click the humidity display area to enter the humidity curve view interface, and the interface displays the current humidity curve;



The ordinate of the figure is the humidity axis, and the range of the axis is 40%RH~100%RH; the abscissa is the time axis, and the current display time range is 12 hours;

If you need to view the historical temperature records, click the forward or back button  at the lower left corner of the humidity curve screen to view the humidity curve at a specific time. When viewing the historical records, the time range of the abscissa is 24 hours. Each time you switch to a new time, the curve will be displayed with a delay of 1 second, and the temperature records of any day within 30 days can be viewed.

7.3 Oxygen concentration control



Always follow your doctor's instructions when deciding on your oxygen supply.



During the oxygen supply process, try to pay attention to the oxygen concentration in the incubator.



Do not supply humidified oxygen from the oxygen supply port, supplying humidified oxygen may damage the internal oxygen supply valve.



Use an oxygen monitor to monitor changes in the oxygen concentration continuously in the incubator.



Follow the doctor's instructions to choose the appropriate oxygen method, the appropriate oxygen concentration, and the appropriate oxygen time.



Do not place any auxiliary equipment that may generate sparks near the incubator.



Spontaneous ignition may occur when oil and grease come into contact with pressurized oxygen. Do not allow these substances to stick to oxygen supply devices such as oxygen pressure regulators, oxygen cylinder valves, pipes, and joints.

 Periodically calibrate the oxygen concentration in the incubator with the oxygen in the atmosphere.

 Cleaning or maintaining the incubator in a high oxygen environment may cause fire or explosion.

 Before cleaning the incubator, check that the oxygen supply has stopped.

 When the incubator is not working, stop the oxygen supply or remove the oxygen hose from the incubator.

 If the oxygen battery is damaged when dropped, the electrolyte may leak, and so on. If the electrolyte comes in contact with your skin or clothing, rinse with plenty of water. If it gets into your eyes, immediately wash your eyes with plenty of water and consult a doctor.

 The oxygen supply process may increase the noise level inside the box.

9. Oxygen Transfusion Operation

- (1) First insert one end of the oxygen supply hose into the oxygen supply port on the rear side of the incubator box and the other end into the oxygen supply device port with a flow monitor.



- (2) Before use, make sure that the oxygen sensor is calibrated with the oxygen in the atmosphere (21% oxygen).
- (3) As shown in the figure below, click the oxygen concentration display area on the main screen, and the screen will switch to the oxygen concentration setting interface



- (4) Adjust the oxygen concentration value to reach the expected level, and the setting is completed. The device will automatically adjust the opening and closing of the oxygen inlet according to the set oxygen concentration value to keep the oxygen concentration in the infant compartment near the set value, and the display will display the oxygen concentration in the infant compartment in real time.
- (5) Stop the oxygen supply, touch the oxygen supply area on the display screen, select in the information window  , indicating that the oxygen function is disabled or open; when the oxygen concentration control function is disabled, the main screen is displayed as follows:

10. Oxygen Concentration Measurement and Calibration Operation Method



There are two oxygen sensors inside the information transmission box, one for oxygen concentration display and one for oxygen concentration control. The two sensors need to be calibrated separately.

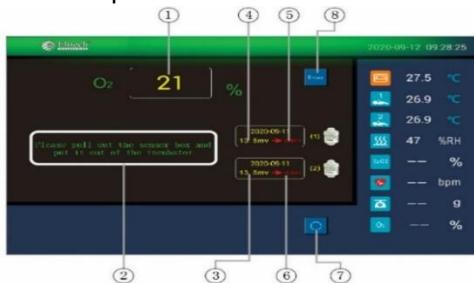


In order to ensure the accuracy of the measurement, a calibration operation must be performed regularly. The calibration operation is divided into two types: regular oxygen concentration calibration (21%) and pure oxygen concentration calibration (100ed per 3 months, and a pure oxygen concentration calibration is performed once a year. Normal concentration calibration requires only ordinary air to the oxygen sensor, and the pure oxygen concentration calibration requires pure medical oxygen to the oxygen sensor.

Calibration method:

(1) Placing the oxygen sensor in the air, Press the elastic pieces on both sides of the information transmission box, and pull out the information transmission box at the same time, and place it in the air.

(2) In the oxygen concentration setting interface, click the calibration button  , performing an oxygen sensor calibration, please do not press other button before the calibration is finished. The calibration number will disappear when the calibration is finished, and the calibration is completed.



No.	Item
1	Oxygen concentration calibration value
2	Calibration prompt message
3	Current oxygen control battery voltage
4	Current oxygen battery voltage
5	Oxygen control battery voltage threshold
6	Oxygen battery voltage threshold
7	Back
8	Enter



Note: When the current voltage of the oxygen control or oxygen display battery reaches the critical value of the oxygen control or oxygen display voltage, it is recommended to replace the oxygen

battery, otherwise the oxygen concentration measurement will be inaccurate.

(3) Click  to calibrate the oxygen sensor. Please do not press other keys before the calibration is over. There will be a text prompt when the calibration is over, and the calibration is now complete.

11. Technical parameters of oxygen control system

O2 concentration display range	0~100%
O2 concentration measure accuracy	±3%
O2 concentration setting range	20~60%
O2 concentration control accuracy	±3%
O2 concentration deviation alarm	±%5

7.4 Pulse oximeter

12. Caution for sensor connection

When pulse oximeter connected to an infant, incorrect handling of the pulse oximeter sensor may result in inaccurate measurements. Install the sensor correctly according to this operation manual, pay attention to the following points:

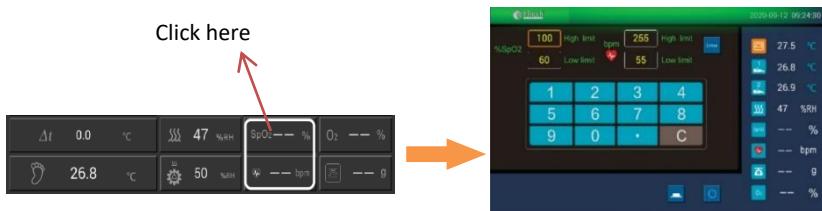
 Cautions
<ol style="list-style-type: none">1. Gently wrap the tape which used to fix the sensor, so that the sensor can contact the skin. Too tight will impede blood circulation and may not result in measurement.2. When shipped from the factory, the sensor is not sterile.3. Failure to properly connect the sensor to the patient may result in inaccurate measurements.4. Placing the sensor for a long time may cause inaccurate measurements.5. After the connection with the patient, the persistence of the fastening pressure exists, and the position of the sensor should be changed at least every eight hours.6. Do not use damaged sensors.7. Do not immerse the sensor in any liquid.

8. Elevated levels of carbon monoxide (COHb) or methemoglobin (MetHb) may cause inaccurate measurements of pulse oximeter.

13. Connection with patient

(1) Insert the pulse oximeter plug into the corresponding socket at the back of the incubator, and then pass the wire and sensor probe through the infusion seal at the back of the cabinet into the incubator and connect with the patient.

(2) As shown in the figure below, click on the display area of blood oxygen saturation and pulse rate on the main screen to set the upper and lower limit of blood oxygen saturation and pulse rate alarm.



(3) Set the upper and lower limit of the corresponding alarm to the required level; if you want to turn off the pulse and blood oxygen function, click the button to turn on or off the function; when the pulse and blood oxygen function is off, the main screen is like this display



(4) After a few seconds, the detected pulse oximeter data will display on the screen.

7.5 Weight monitor

14. Weight scale features

Measuring instruments for measuring the weight of baby, Elitech baby scales use high-precision, low-temperature drift weighing sensors and software for temperature compensation. They have the advantages of high measurement accuracy, stable digital display, fast response speed, and convenient operation. The baby scale can continuously weigh the baby, which is conducive to the big data storage and analysis of the weight signal; it can also observe the change of the baby's weight, which

is beneficial to the analysis and judgment of the health status of the baby's development and growth; By lifting the baby to automatically tare, it is convenient for the nursing staff to clear the baby's shit and urine and weigh the baby again.

15. Main technical parameter

Voltage	DC5V
Resolution:	1g
Weighing accuracy	$\pm 8g$
Accuracy of weight increment	$\pm 2g$
Weighing limit	12Kg
Operating temperature	20°C~38°C
Functions	weighting 、 weight increment observation 、 lifting the baby to automatically tare

16. Installation

Reference Chapter 5.5《Installation of weight scale》

17. Instruction of weight scale usage

(1) Connect the plug of the baby scale to the socket of the control box. As shown in the figure below, click on the weight display area on the main screen to enter the weighing interface:



(2) The weight of the bed tray is reset to zero. Before the child is put in, under the weighing screen, click $\text{W} >0<$ the weight reset button twice in succession. At this time, the bed plate includes the internal weight to be reset, and the child can be placed in to measure the weight

(3) The weight lifted by the child in the bed is cleared. The child is already in the bed tray. Under the weighing screen, click $\text{W} >0<$ the

weight reset button once. The screen prompts that the child can be picked up at this time. The medical staff can pick up the child while watching the screen. Waiting for a few seconds, the weight will be displayed automatically. After clearing, put the child into the bed tray, and the weight displayed on the screen is the current weight of the child.

ΔW

(4) Clear weight gain in the weighing screen, click $>0<$ to reset the weight increment.

(5) View the weight history curve. The ordinate of the figure is the weight axis, and the range of the axis is 0g ~ 6000g; the abscissa is the time axis, and the current display time range is 12 hours;

Select

If you need to view the historical weight record, click the forward or back button at the lower left corner of the weight curve screen to view the weight curve at a specific time. When viewing the historical record, the time range of the abscissa is 24 hours. Each time you switch to a new time, the curve will be displayed with a delay of 1 second, and you can view the weight records of any day within 30 days.

18. Cautions



Cautions

1. Baby scale when use, must be in the use of the environment (infant incubator) stability more than 30 minutes, for further weighing operation, to ensure that the baby scales are consistent with the environment temperature, reduce the influence of temperature change on the weighing (especially in the process of temperature change);
2. When the baby scale is in normal use, the baby should be released gently. When holding the baby, do not apply force to the scale so as not to damage the weighing sensor;
3. The baby scale is affected by various factors. When weighing normally, the number will occasionally jump up and down, but it will not exceed the precision range, and it will not affect the weighing result.
4. When the scale plug is unplugged or connected under the power-on state, an open-loop alarm will appear on the scale; after stopping the

- alarm, the tare operation should be performed again for the scale to work normally;
5. Baby scale when use, must be in the use of the environment (infant incubator) stability more than 30 minutes, for further weighing operation, to ensure that the Electronic Component are consistent with the environment temperature, reduce the influence of temperature change on the weighing (especially in the process of temperature change);
 6. In the infant incubator, the infant bed must be adjusted to the horizontal position to reduce the measurement error;
 7. When do disinfection to baby scale, pls use wet cloth to wipe, and avoid water or disinfectant into the scale, otherwise it may damage the Electronic Component.
 8. If the baby scale not use for a long time, should be taken down. Do not place any items on the scale during storage, so as not to affect the accuracy of measurement.
 9. If the scale is abnormal, do not disassemble and maintain the baby scale. Professional technicians should be requested to check and maintain the repair manual according to the requirements and procedures.
 10. Warning: It is forbidden to weigh more than 12KG.

7.6 Upside Phototherapy Unit

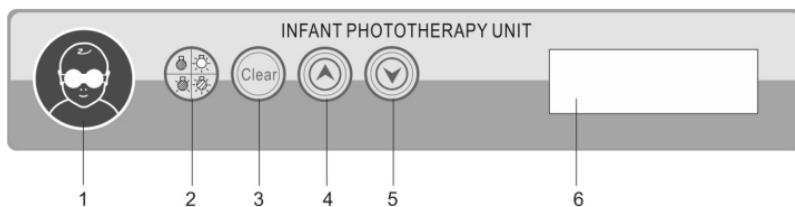
19. Main performance parameters

Safety features	Class I, continuous operation	
Power Supply	$\sim 110V \pm 240V$ 50Hz/60Hz	
Power input	60VA	
Radiant Wavelength	420nm ~ 490nm	
Number of LED bulbs	17pcs	
	(irradiation distance 50cm)	(irradiation distance 36cm)

Maximum total bilirubin irradiance	2500μW/cm ²	4500μW/cm ²
Average total bilirubin irradiance	2200μW/cm ²	3600μW/cm ²
Uniformity	> 0.4	
Time accuracy	1min/12h	
Accumulated time range	0h ~ 50000h	
Accumulated time range	30min ~ 48h	

20. Panel Function Introduction and Operation Method

(1) Introduction of operation panel, as shown in Figure 7-1:



No.	Name	Description
1	Protective label	Baby must wear eye mask during phototherapy
2	Irradiance strength button	Change the irradiation intensity level : ☀ sign means high irradiation intensity; ☀ sign means medium irradiation intensity; ☀ sign means low

		irradiation intensity;  sign means non-irradiation ;
3	Clear button	Clears the time of this irradiation
4	Increase button	a) View the total accumulated time; b) Increase the value when setting the countdown time
5	Decrease button	a) Press and hold for a few seconds to enter the countdown setting; b) Decrease the value when setting the countdown time
6	LCD display	Illumination time display

(2) Back panel



21. How to use

(1) It must be cleaned before use, especially the lens surface must be free of dust to avoid affecting the lighting effect.

(2) Plug one end of the power cord into the input socket on the back of the machine, and the other end into the AC 220V50Hz output socket of the baby incubator (the ground wire in the socket must be reliably grounded).

(3) After the child is protected by eye mask, perineum mask, etc., the child is limited to the effective surface area of the phototherapy light box.

(4) Turn on the power switch of the phototherapy light box, the LED lamp beads in the blue light box light up (the default high-level irradiation intensity is defaulted for the first time), the timer starts counting, and the treatment starts.

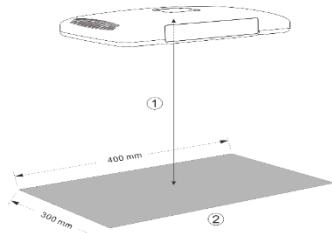
! Under the guidance of the clinician, the operator should select the appropriate irradiation intensity based on the patient's condition and Table 8-1, and review the effect of phototherapy every 4 hours to determine whether to change the level of irradiation intensity.

Table 8-1 Blue light irradiation intensity, irradiation distance, effective area and gear table

Use with incubator, irradiation distance: 360mm, effective irradiation area: 400mm × 300mm		
	Average value of total bilirubin irradiance ($\mu\text{W}/\text{cm}^2$)	Maximum value of total bilirubin irradiance ($\mu\text{W}/\text{cm}^2$)
High	3600	4500
Middle	2500	3200
Low	1150	1450

Note: The distance between the lower surface of the phototherapy light box and its effective surface is the irradiation distance. The center of the effective surface irradiated by the light box coincides with the center of the baby mattress.

The maximum value of total bilirubin irradiance on the effective surface is the maximum total bilirubin irradiance $E_{bi\ max}$; the average value of all points between total bilirubin irradiance $E_{bi\ min}$ and $E_{bi\ max}$ is total bilirubin Irradiance mean $E_{bi\ avg}$.



NO	Item
1	Effective distance
2	Effective area

Effective surface size and its position relative to the phototherapy device

(5) The blue light irradiation intensity of the machine can be selected from high, medium and low. The blue light irradiation intensity can be adjusted by pressing the key , the switching sequence is: high → mid → low → pause; there are corresponding symbols on the display screen to indicate the current radiation intensity mode, as shown in Figure 8-1, all three symbols are solid When the radiation intensity is high-end; two solid, one hollow, the radiation intensity is mid-range; one solid, two hollow, the radiation intensity is low-level; when all three are hollow, the blue light beads are temporarily closed, that is, Is suspended.



Figure8-1 Irradiance mode display

 After the power is subdivided, turn on the device again, and the machine automatically returns to the last subdivided photo intensity mode.

 The temperature of the child should be checked regularly during phototherapy. According to the situation, the baby should be properly replenished with fluid.

(6) Use of timer

1) When the device is in the pause state, the timer stops counting and displays the time of this irradiation in the format of "hour: minute: second"; press  the key again, the blue light bead will continue to light, and the timer will continue to count time.

2) The blue light box has the functions of turning off the blue light regularly and accumulating time. When the timer setting is not performed, the default phototherapy time is 100 hours, and it will stop automatically when the time comes. The time displayed by the cumulative timer function is the sum of the phototherapy time from the first use to the current

implementation. It is displayed in the format of "XXXXX.X" hours. The maximum accumulated time is 19999.9 hours.

3) Clear the timer: Hold down the key without letting go. After a few seconds, the timer resets the current use time to zero.

4) The method of setting the irradiation time (timely turning off the blue light) is shown in Figure 8-2:

- a) Press and hold the  key for a few seconds to enter the countdown setting mode. The default countdown time is 1 hour. To change this time, press  or  to increase or decrease the countdown lighting time. The lighting time that can be set is: 30 minutes \times n ($n = 1 \sim 96$), when $n = 97$, it is displayed as 0, that is, the setting range of the lighting time is: 03:00: 00-48: 00: 00'.



Figure8-2 Setting the countdown time

- b) If the irradiation time is set when the blue light lamp is lit, the blue light lamp continues to work normally with the irradiation intensity; if the irradiation time is set when the blue light is paused, and the blue light lamp beads are automatically lit, the irradiation intensity is High-end; the time display starts to gradually decrease the set time (that is, the countdown starts) until the display is 0 and the irradiation stops. (If "03:30:00" is displayed during the countdown, it means that there is 3 hours and 30 minutes before the end of the light)

- 5) View the progressive time: press the  key for a few seconds, the incremental time will be displayed, and then the original display will be restored by itself.

(Note: The accumulated time is displayed in decimal time, and the unit is hour)

(7) After the phototherapy is finished, please turn off the phototherapy lamp switch and unplug the power plug.

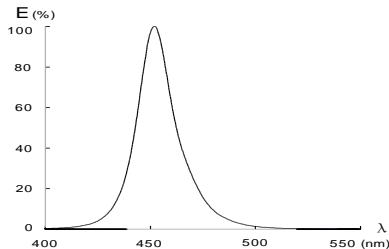
(8) Tips:

1) The normal timing is incrementing timing, which displays the current phototherapy time, up to 100 hours; the timing is decreasing, which displays the remaining time of phototherapy, up to 48 hours.

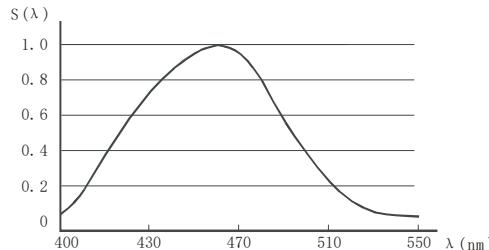
2) After the power is turned off (turn off the switch), the phototherapy time resets itself to zero, and the accumulated timing information is permanently stored, unless it is reset to zero by using the "clear" button.

22. precautions

- (1) This equipment must be operated by trained qualified medical personnel.
- (2) Infant skin should be bare in treatment, hat and socks will also effect the treatment result.
- (3) When the distance is shortened, the power density of the blue light illuminance increases, which will improve the treatment effect, but also increase the treatment substitution. In fact, the scattered illumination is limited by the height of the sensor cover, so the distance between the baby mattress and the light box is fixed between 30CM ~ 50CM, and users must not change it without authorization.
- (4) The use of phototherapy equipment may affect the child's body temperature, and it is necessary to measure the child's body temperature; phototherapy may also affect the water balance of some children. To prevent the lack of water, children need to be supplemented with fluids.
- (5) During phototherapy, the patient's bilirubin value should be measured regularly.
- (6) The lens surface must be cleaned frequently. The Plexiglas on the top of the baby cabin should be kept clean and transparent to ensure the effect of phototherapy.
- (7) As the distance between the phototherapy device and the effective surface increases, the average value of total bilirubin irradiance will decrease; as the distance decreases, the average value of total irradiance will increase.
- (8) The figure below shows the irradiance curve with a wavelength range of 400nm to 550nm and an interval of 5nm.



- (9) LED lamp beads have a service life of 20,000 hours. When the cumulative operation of the blue light tube exceeds the expected life, the irradiance may decay by more than 25%. All LED lamp beads must be replaced to ensure the treatment effect
- (10) When replacing the lamp beads, the special LED lamp beads specified by the manufacturer must be used, otherwise the safety and effectiveness of the phototherapy equipment will be affected.
- (11) Only use the parts specified by our company (including adapters and LED lamp beads) when repairing the product, otherwise the safety and effectiveness of the equipment will be reduced.
- (12) The calibration curve of the blue light radiometer for measuring the total irradiance of bilirubin is shown in the figure below. The abscissa represents the wavelength of the radiant light and the ordinate represents the spectral sensitivity of the blue light radiometer.



- (13) For neonatal patients with severe jaundice, light therapy should also be used in combination with drugs, and even combined with blood exchange therapy to prevent phototherapy alone. The effect is not ideal and affects the treatment of children.
- (14) When observing baby skin color for diagnosis, a white light source should be used to prevent blue light from affecting skin color observation.
- (15) Protective devices intended to prevent the patient from leaving the effective surface area (eg cribs, front doors, etc.) must be regularly checked for safety functions.

- (16)The maintenance period of the phototherapy accessory is 2 months. Be sure to replace the LED lamp beads after the total bilirubin irradiance is attenuated by 25%.
- (17)The safety requirements of equipment auxiliary devices shall meet the general safety requirements of GB 9706.1: 2007.
- (18)The service life of this equipment is 6 years. At the end of life, the product should be disposed of in a timely manner. The disposal of product waste must meet the requirements of laws and regulations.
- (19)Do not use in the environment with portable and mobile RF communication equipment, so as not to affect the normal operation of the product.

23. Cautions

- (1) During the phototherapy process, the temperature of the incubator will rise, and you should follow the doctor's instructions.
- (2) Because a mature baby emits a lot of heat, if you put the baby in an incubator for light treatment, the temperature of the incubator may rise. If you use multiple phototherapy devices at the same time or the room temperature is too high, the air temperature in the incubator will also increase.
- (3) The use of phototherapy equipment in the incubator increases the supply of heat, but the temperature controller of the incubator will automatically reduce the heating power of the heating tube, so that the air temperature in the equipment meets the requirements. However, as the phototherapy equipment may increase the child's body temperature, it is recommended to use skin temperature control or reduce the box temperature setting value according to the measurement of the child's body temperature when implementing phototherapy. .
- (4) During phototherapy, the child's eyes must be covered with an opaque black cloth or an eye mask should be worn to avoid damage to the patient's retina during light exposure. The eye mask should be tight and tight.
- (5) During phototherapy, the genitals should be covered with diapers to prevent damage to genital function.
- (6) Photoisomers of bilirubin may cause toxic effects during phototherapy.

- (7) Patients near the phototherapy device can be protected with a black cloth barrier to prevent its impact; if the operator is exposed to the phototherapy device for a long time, it may be affected.
- (8) Use an opaque cloth curtain to cover the thermostat for protection, which will affect the nursing staff's care and observation of the child. It is recommended to increase the frequency of child monitoring, and if necessary, a transparent observation window should be retained for real-time observation.
- (9) Due to the actinic effect of the medicine, it is forbidden to store the medicine and injection solution in the irradiation area of the phototherapy device.
- (10) Prohibit the use of flammable agents to wipe or disinfect the phototherapy equipment.
- (11) Phototherapy equipment should not be used in the presence of combustion-supporting gases (eg oxygen, nitrogen oxides, anesthetic gases).
- (12) Contraindications: It is strictly forbidden to use a phototherapy device to irradiate children with a body temperature higher than 37.7°C and children with directly elevated bilirubin

7.7 Downside Phototherapy Unit

24. Main performance parameters

Safety features	Class I, continuous operation		
Power Supply	12V		
Power input	10VA		
Radiant Wavelength	420nm~490nm		
Number of LED lamp beads	36		
Maximum bilirubin total irradiance	Level 1	Level 2	Level 3
	700μW/cm ²	1350μW/cm ²	2000μW/cm ²
Uniformity	>0.4		

25. Down side phototherapy unit installation and wiring

Installation and wiring method Refer to Chapter 6.4 《Installation of down phototherapy unit components and connection with control

wire》.

26. Down side phototherapy unit use

(1) Inspection before use

(2) Check that the phototherapy device is in the correct position under the crib, that the light-transmitting surface is clean and that nothing is blocking the radiation.

(3) The child is confined to the surface area where the crib is irradiated.

(4) Set the box temperature below 33 ° C and remove items that affect light transmission such as baby mattresses.

(5) Click on the main screen  , the following blue light setting interface appears. The blue light is divided into 3 gears. Click the corresponding number to select the corresponding gear. The third gear is the maximum bilirubin irradiance gear. Select the appropriate according to your needs. Gear; if you need to turn off the blue light

therapy, click .



After the phototherapy is completed, the set temperature of the incubator should be reset.

27. Function Description

The longest count time is 59 hours, and the longest countdown setting time is 59 hours.

(1) Count function

In the down side phototherapy setting interface, click the  button to enter the mode. In the brightness selection area, click the corresponding number key  to set the blue light irradiation intensity. When the corresponding number key color be darkened, the brightness will be turned on, and the count function will work;

If you need to restart timing, first click the pause button  , then click the button  , the positive timing will be cleared and restart timing;

If you need to pause the timing, click the button  to pause the timing.

(2) Countdown function

In the down side phototherapy setting interface, click the  button to enter the mode, the countdown mode is at this time, first click the  button, then set the countdown, after the setting is complete, click  ; in the brightness selection area, click the corresponding number button  to set the blue light irradiation intensity, When the corresponding number key color be darkened, the brightness will be turned on, and the countdown function will work.

28. Precautions

Same to Upside Phototherapy Unit

29. Warning

Same as above for upside phototherapy.

7.8 Other functions

30. Set time

Click   the time setting button on the function menu interface, the system time setting interface appears, and set the current time.

31. System Settings

On the function menu interface, click   the system setting button. You need to enter the password to enter the system setting interface:



The system setting interface is as follows:



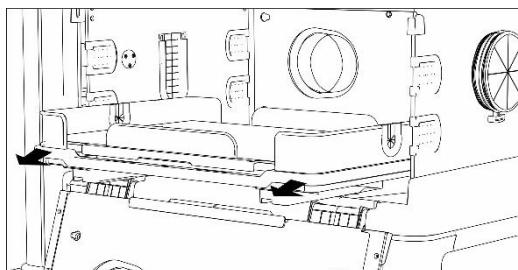
This interface is mainly used for calibration of various functional parameters and over-temperature testing, including box temperature sensor deviation calibration, skin temperature sensor deviation calibration, humidity sensor deviation calibration, load cell calibration, and 2-fold over-temperature test.



Warning, non-professional maintenance personnel should not modify the settings of this interface.

32. Pulling out and placing the bed

- (1) Open the door of the wall hood as shown in the figure below.
- (2) Hold the side rails on the upper end of the bed tray and pull the bed tray out.



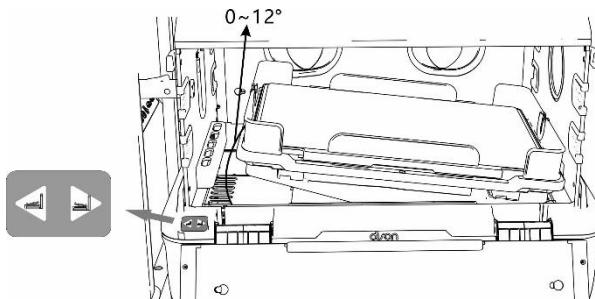


Warning

- (1) Before pulling out the bed tray, check whether the slide bar of the lower bed tray is engaged with the slide groove of the bed support. Otherwise, the bed tray will fall off, causing danger.
- (2) When the weighing device is connected, take care not to pull the weighing connection line when pulling out the bed plate. When resetting the bedplate, do not let the weighing cable get caught in the gap.
- (3) When the down side phototherapy unit is connected, be careful not to pull the down side phototherapy unit cable when pulling out the bed plate. When resetting the down side phototherapy unit, do not let the down side phototherapy unit cable get stuck in the gap.
- (4) When the baby is placed on the bedplate, be careful not to forcefully pull the tubing on the baby.

33. Angle adjustment of the bed

As shown in the figure below, press the bed tilt button placed on the guardrail around the box, the bed is tilted to a suitable angle, and stop pressing.



Warning

- (1) Before tilting the bed, make sure that the door of the thermostat is closed. otherwise doing so may cause the baby to fall out.
- (2) When the weighing device is connected, be careful not to pull the weighing connection line when the bed is tilted.
- (3) When the down side phototherapy unit is connected, be careful not to pull the down side phototherapy unit cable when the bed is tilted.

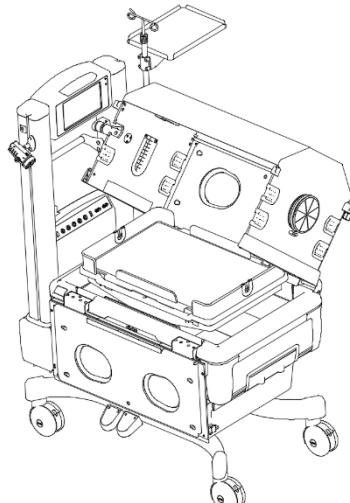
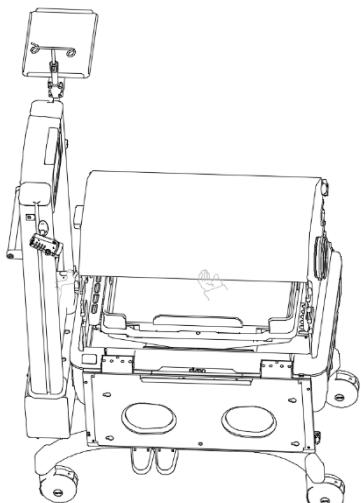
- (4) When the bed is tilted, be careful not to get any tubing or probes stuck.

34. Wall hood flip

As shown in the figure below, facing the machine, open the wall hood door on the left side, stand on the left, press the blue button on the flip handle to release the wall hood from the left column slot, and lift the wall hood upward with the other hand Cover until the wall hood is flipped until the flip handle is caught in the slot on the right column. When resetting, the same operation method.

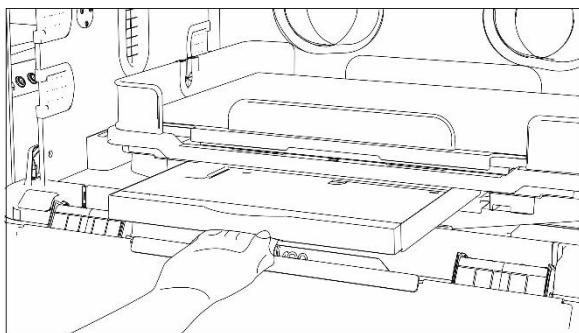


- (1) When the weighing device is connected, be careful not to pull the weighing connection line with force when the wall hood is turned over.
- (2) When the down side phototherapy unit is connected, be careful not to pull the down side phototherapy unit connection cable when the wall hood is flipped.
- (3) When the wall hood is turned over, be careful not to get any tubing or probes stuck or pulled forcibly.
- (4) When the wall hood is turned over, be careful not to place any movable objects on the top of the wall hood to avoid falling.



35. X-ray Cassette Tray

As shown in the figure below, facing the machine, open the door of the wall hood on the right side, and place the X-ray cassette on the lower side of the lower tray. Before pulling out, make sure the bed is in a horizontal position. Pull the X-ray cassette handle to pull the X-ray cassette to a certain position. Place the X-ray box with X-ray cassette on the X-ray cassette and return the X-ray cassette to its original position.



Warning

When taking X-ray pictures using the supplied X-ray cassette, please read the relevant instructions and ensure that the necessary protective measures are taken.

8.Cleaning and disinfection



Warning

- (1) The product was shipped without sterilization. After purchase, be sure to clean and disinfect before the first use.
- (2) For the concentration of disinfectant, contact time and treatment method, please refer to the attached documents. Follow the usage, dosage and precautions in the instructions.
- (3) Before cleaning or maintaining the equipment, check whether the oxygen supply to the incubator has stopped and whether the incubator is disconnected from the oxygen supply. Cleaning or maintaining the incubator in a high oxygen environment may cause fire or explosion.

- (4) When you use this product for other different babies, please clean and disinfect the product (wash and disinfect at least once a week during the same baby's training period).
- (5) When you notice any dirt or stain that may cause infection, please clean and disinfect the machine.
- (6) After cleaning and disinfection, assemble the removed parts correctly, and check whether the equipment operates normally.
- (7) After cleaning and disinfection, remove all disinfectant solution.

Take a clean, soft cloth and disinfectant solution for cleaning and disinfection. Recommended disinfectants include:

0.2~0.5% Benzalkonium chloride solution

0.2~0.5% Benzethonium chloride solution

0.02~0.05% Chlorhexidine solution

Note: If the solution is used for disinfection, it must be diluted before use. Do not use undiluted solution for cleaning and disinfection!

Do not use any abrasives, cleaners, alcohol, acetone or other solvents for cleaning and disinfection.

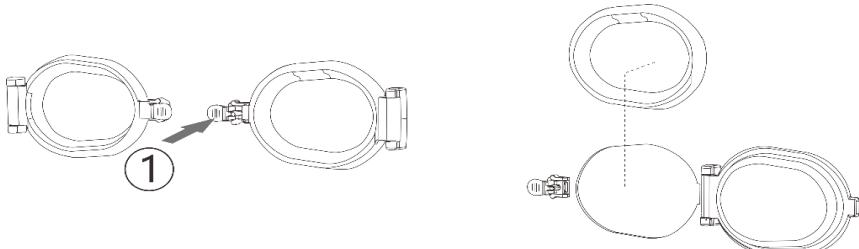
First immerse the parts of the incubator in the disinfectant solution. Rinse with clean, warm, sterilized water and let it dry completely. Finally, use a soft rag to remove moisture. Clean and disinfect each part using the split method.

8.1 Cleaning and disinfection of wall hood accessories

1. Small door seals and doors

As shown in the figure, open the door, remove the door seal, soak in the disinfectant and clean.

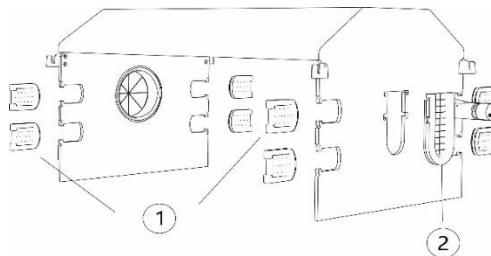
After cleaning, dry it and install it in its original position to ensure it is in place and in the correct orientation.



No.	Name
1	Press here

2. Inner Hood

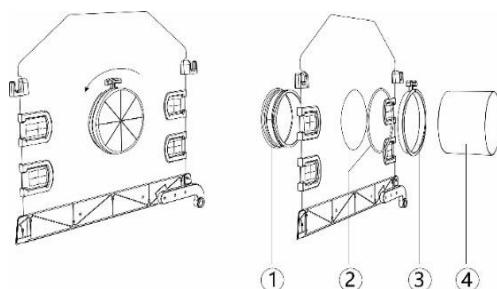
As shown in the figure, remove the 8 small infusion seals and 1 large infusion seal on the thermostat cover, soak and clean them in disinfectant. After cleaning, install it in the original position after drying, make sure it is installed in place and the installation direction is correct.



No.	Item
1	Small infusion seal
2	Big infusion seal

3. Rotary window and sleeve

As shown in the figure, turn the rotating window moving ring counterclockwise, and remove the sleeve according to the instructions; then remove the moving ring, pull out the positioning silicone rubber band, and finally remove the rotating window fixed ring. Soak and clean the removed parts in disinfectant. After cleaning, reset, pay attention to the installation in place, and the installation direction is correct

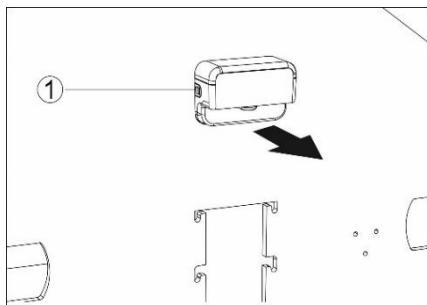


No.	Item
1	Rotary window fixed circle

2	Rubber band
3	Rotating window
4	sleeve

4. Information transfer box

As shown in the figure, pinch the fixing pieces on both sides of the information transmission box with your hands and pull out the information transmission box. Use a soft cloth soaked with disinfectant, wring it out thoroughly, and wipe all the outer surfaces of the information transmission box.



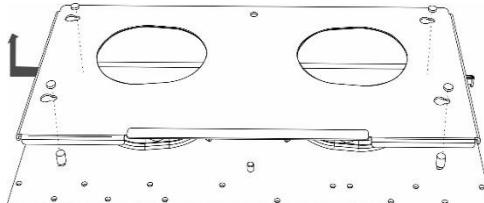
No.	Item
1	Fixed piece

5. Thermostatic hood liner

As shown in the figure, open the door of the thermostatic cover, separate the door from the positioning column in the middle of the liner, push the liner to one side, and then remove the liner upward. Wet a soft cloth with disinfectant, wring it out thoroughly, and wipe all outer surfaces of the inner tank and the door. After cleaning and disinfection, reset it correctly.

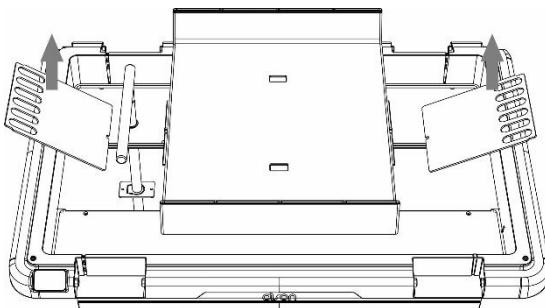


Warning! After cleaning the inner tank, be sure to install it correctly on the door. Otherwise it will cause the stability of the internal temperature of the cabinet!



6. Outlet baffle

As shown in the figure, remove the air outlet baffles on both sides of the box, soak a soft cloth with disinfectant, wring it out fully, and wipe all the outer surfaces. After cleaning and disinfection, reset it correctly.



7. The whole thermostat cover

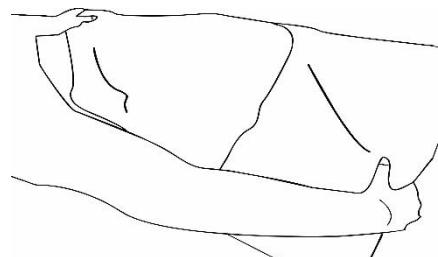
Wet a soft cloth with disinfectant, wring it out thoroughly, and wipe all external surfaces.

8.2 Cleaning and Disinfection of baby bed

8. Baby bed mattress

As shown:

- (1) Remove the cover of the baby mattress, soak it in disinfectant, and dry.
- (2) Gently wipe the surface of the removed bladder with a soft cloth soaked with disinfectant solution and dry it.
- (3) Restore the baby mattress.



9. Upper bed tray

Remove the upper bed tray from the lower bed tray as shown, and gently wipe all surfaces with a soft cloth soaked with disinfectant.

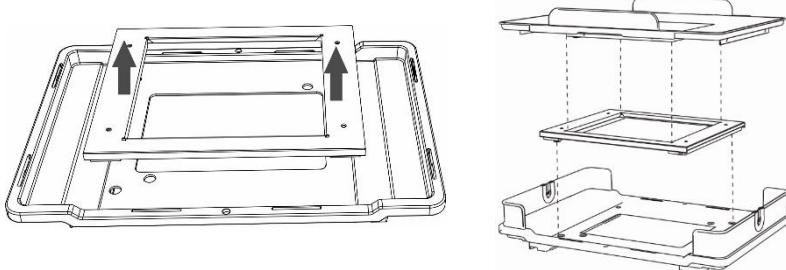
Remove the infusion seal on the bed tray, soak it in the disinfectant solution, wash it, and dry it. When resetting is completed after washing, correctly place the bed tray as shown in the figure.



10. Baby Scale

As shown in the picture, after removing the upper bed tray, first unplug the baby scale sensor connection cable, and then gently lift the baby scale upward, slowly pull the baby scale sensor cable out of the wire hole, and finally find a suitable place to place the baby scales.

Soak with a disinfectant in a soft cloth, wring thoroughly, and wipe all external surfaces. When resetting is completed after washing, correctly place the baby scale as shown in the picture.



Do not immerse the baby scale in water or disinfectant, as this may cause damage to the equipment.

When resetting the baby scale, be careful not to pinch cables or other objects between the upper and lower trays. Otherwise, the baby's weight may not be accurately measured.

11. Next bed tray

As shown in the picture, when only the bed tray is in the center of the bed support, support the bed tray on both sides and remove the bed tray upwards.

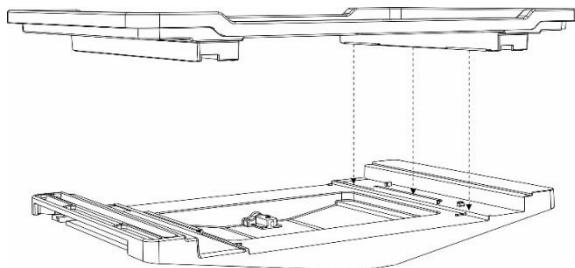
Soak with a disinfectant in a soft cloth, wring thoroughly, and wipe all external surfaces. As shown in the figure, when only the bed tray is in the center of the bed support, support the bed tray on both sides and remove the bed tray upwards.

Soak with a disinfectant in a soft cloth, wring thoroughly, and wipe all external surfaces.



Warning

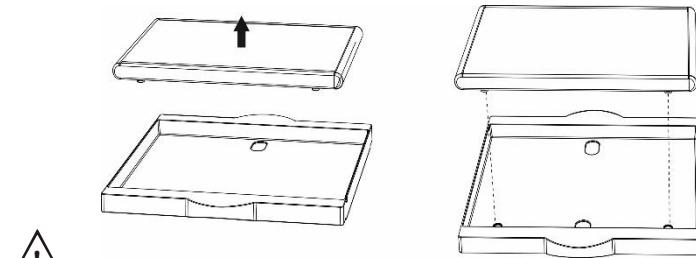
When resetting, please place the bed tray according to the instructions.



12. Downside Phototherapy

As shown in the picture, the downside phototherapy is built into the film box. Unplug it's connect line, then take out.

Wet with a disinfectant in a soft cloth, wring thoroughly, and wipe all outer surfaces



Warning

Do not immerse the phototherapy in water or disinfectant solution, otherwise the equipment may be damaged.

13. X-ray Cassette Tray

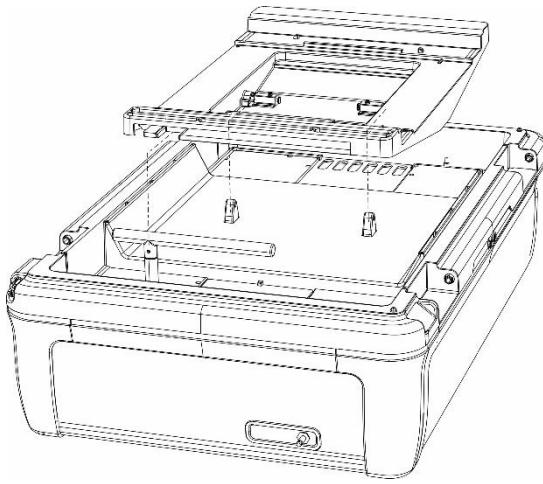
Take out the X-ray cassette tray from the bed support, soak it with a soft cloth with disinfectant, fully wrung, and wipe all the outer surfaces.

14. Baby Bed Support

(1) As shown in the picture, press the red button on the bed tilt shaft seat, and the bed bracket is unlocked at this time.

(2) According to the method shown in the picture, lift the bed support at one end to disengage it from the support of the bed support; then pull the bed support to one side to disengage it from the bed tilt slide bar, and finally remove the bed support upwards.

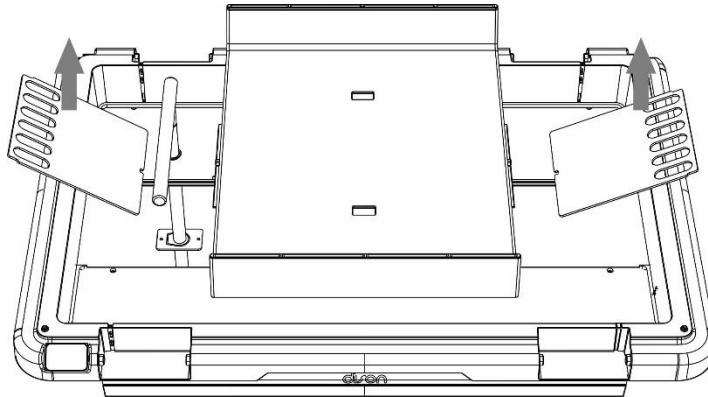
(3) Wet with disinfectant in a soft cloth, fully wring, and wipe all outer surfaces.



8.3 Cleaning and Disinfection of Air baffles &Fan & Air duct

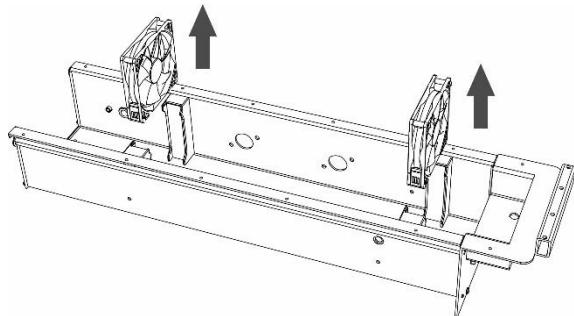
15. Air baffles

As shown in the picture, remove the air baffles on both sides of the air duct remove the air deflector upwards, wet the disinfection solution with a soft cloth, fully wrung, and wipe all the outer surfaces.



16. Fan

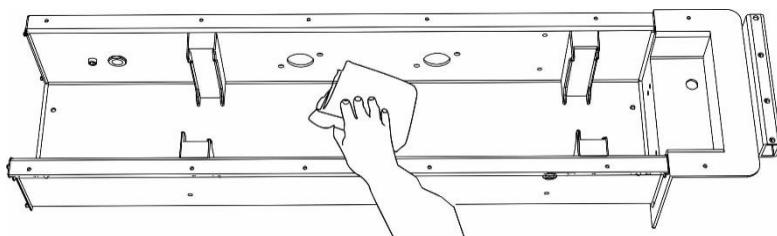
As shown in the picture, pull the fan upwards to remove it, and soak it with a soft cloth and disinfectant solution, fully dry it, and wipe all outer surfaces.



! Do not soak the fan with disinfectant, otherwise it will be damaged.

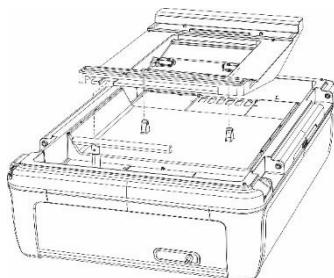
17. Air duct

- (1) Wet a disinfectant with a soft cloth and wipe the outer surface of the heating tube.
- (2) Wet with a soft cloth and disinfectant solution, and wipe all internal surfaces and corners.



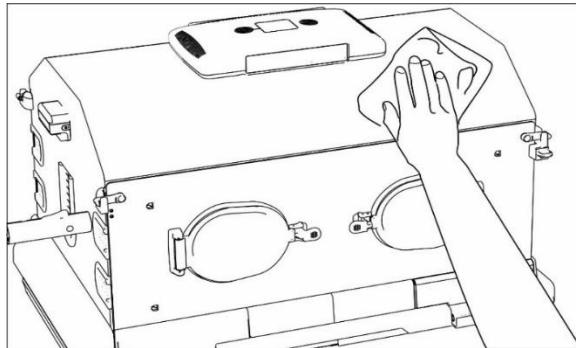
8.4 Cleaning and Disinfection of Humidification

Refer to chapter 8.2, the disassembly method of the humidification box, soak the humidification upper cover and humidification lower cover and the inlet cover with disinfectant.



8.5 Cleaning and Disinfection of Equipment surfaces

As shown in the picture, moisten with a soft cloth with disinfectant solution, fully wring, and wipe all the outer surfaces.



8.6 Cleaning and Disinfection of Other accessories

18. Skin Temperature Sensor

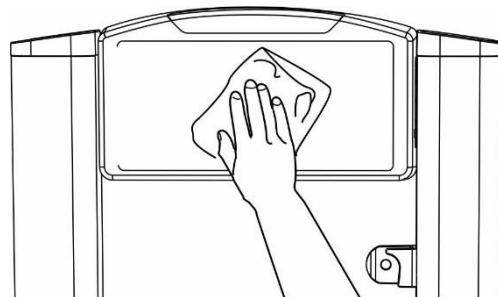
Soak with a disinfectant in a soft cloth, wring thoroughly, and wipe all external surfaces.



Do not wash the skin temperature sensor with alcohol.

19. Display Screen

Soak with a disinfectant in a soft cloth, wring thoroughly, and wipe all external surfaces.



Warning

The surface of the LCD display screen is specially treated. Do not rub the surface of the panel with force. The surface may be damaged.

Do not immerse the monitor in water or disinfectant solution as this may cause it to malfunction.

9. Maintenance and Inspection

9.1 Inspection before turn on

After the incubator is first installed or the parts are removed and reinstalled due to cleaning and maintenance, and before use, the equipment needs to be checked for functions to ensure that the equipment is safe to use.

1. Inspection of Component

If you notice any strange odor, abnormal noise, overheating or damage before using the machine, you should stop using the machine immediately and contact an authorized dealer or supplier.

The inspection items as follows:

Item	Describe
Hood & Front door	The hood & front door should not be damaged or deformed. (Otherwise, the baby or user could be unnecessarily injured due to damage)
Big Infusion Seals	It should be properly fixed on the hood and intact. (Otherwise, the hermetic seal may be damaged.)
Small Infusion Seals	It should be properly fixed on the hood and intact. (Otherwise, the hermetic seal may be damaged.)
Iris port	It should be properly fixed on the hood and intact. (Otherwise, the hermetic seal may be damaged.)

Locking device of front door	Fixed in the right position, fixed firmly, without damage. (Otherwise, there is a risk that the baby will fall out of the infant cabin.)
Locking device of small door	Fixed in the right position, fixed firmly, without damage. (Otherwise, there is a risk that the baby will fall out of the infant cabin.)
Bedrail	Fixed in the right position, fixed firmly, without damage. (Otherwise, there is a risk that the baby will fall out of the infant cabin.)
Inclination of crib	Fixed in the right position, fixed firmly, without damage. (Otherwise, the crib may not tilt.)
Information box	It should be firmly fixed and in place without damage and deformation. (Otherwise, the test results may be inaccurate.)
Inner Hood	It should be correctly installed on the door of the hood without damage or deformation. (Otherwise, the temperature inside the cabinet may be uneven.)
Castor	Each castor should rotate smoothly and lock securely. (Otherwise, the device cannot be positioned well.)
Skin Temperature Sensor	The sensor and wire are not damaged. When the sensor is held on, the display should show the appropriate temperature.
Air filter	It should be clean. (Otherwise, it affects the circulation of air in the cabinet.)

2. Examination of the function

Detailed items as follows:

Item	Way
Inspection power failure alarm	Before the equipment plug insert in the AC power, turn on power switch of control, the indicator of "power failure" and audio and visual will alarm, turn off the switch of control, the alarm will be removed.
Inspection conversion of the air temp control mode and the skin temp control mode	After power on, in the temperature setting interface, click the mode switch button to select the box temperature or skin temperature mode. After returning to the main screen, the background color of the temperature display area of the corresponding mode will increase, indicating that it has switched to the corresponding temperature control mode.
Inspection skin temp sensor alarm	Under the skin temperature control mode, pull out the skin temperature sensor (or turn off plug of sensor, short connection line), the equipment will give out alarm with sound and light, insert skin temperature sensor again (or remove short wiring), the equipment will return to the normal state.
	Set the air temp to 35°C, after temperature is constant, opened the equipment's front door, make the temperature of baby compartment drop,

Inspection temp deviation alarm	<p>when it is lower than 32°C, the equipment will give out alarm with sound and light. Close the front door, after resuming in temperature, the alarm for temp deviation will be silent automatically. When it is from air temp control mode to skin temp control mode, set the skin temp to 35°C. after the temp is constant, put the skin temp sensor in the water of 34°C and 36°C separately, the equipment will give out alarm with sound and light, After resuming in temperature, the alarm for temp deviation will be audio pause automatically.</p>
Inspection over temp alarm	<p>Set the air temperature to 35 °C, click the function menu key on the main screen, then click the system setting key, enter the password, enter the system setting interface, click the over temperature test key, and enter the over temperature test state. In this state, the main screen will display the word "test". When the air temperature rises to 39 °C, an over temperature audible and visual alarm shall be given and the power supply of the heating source shall be cut off automatically.</p>
Inspection of the second over temperature alarm circuit breaker	<p>Set the air temperature to 37.5 °C and try to make the thyristor out of control. When the air temperature is close to 40 °C, the over temperature acoustooptic alarm shall occur and the power supply of the heating source shall be cut off automatically. After the temperature is</p>

	reduced to 37 °C, restart the machine and remove the over temperature alarm state.
Inspection of fan fault alarm function	Try to prevent the fan from rotating. Within 5 seconds, the equipment will send out an audible and visual alarm and stop heating. The alarm will be released automatically after the fan resumes rotating

9.2 Regular inspection

Check the items as follows every three months:

Air temp control	Set the air temp to 36.0°C	The air temperature of the incubator shown should be stable at 36.0 ± 0.5 °C.
Skin temp control	Place the skin temperature probe about 10cm above the center of the mattress surface in the incubator, and the skin temperature control temperature is 36.0 °C.	The displayed skin temperature should be stable at 36.0 ± 0.5 °C.
Humidity control	Set the humidity to 90% and the incubator temperature to 32.0 °C.	The displayed relative humidity should be stable at about $90 \pm 3\%$.
Oxygen concentration control	Connect the oxygen to the oxygen supply interface, and set the oxygen concentration to 35% O ₂ after 21% O ₂ calibration.	It shows that the oxygen concentration is stable at $35 \pm 2\%$ O ₂ .
Fan	The equipment works normally, unplug the fan	The system should have fan fault alarm
Humidifier	Open water box or install water box without water	There shall be water shortage alarm indication.

Power failure alarm	Turn on the power and unplug the power plug from the power outlet.	The power failure alarm indicator shall be turned on and an audible alarm shall sound.
Baby scales	Place a 5 kg weight in the center of the mattress and check the display.	The displayed value shall be within $5000 \pm 5g$.

9.3 Accessories to be replaced regularly

Regular replacement of accessories refers to the parts that gradually deteriorate or wear with use, and they need to be replaced regularly to maintain the accuracy and performance of the equipment.

Name	Recommended use time	Replacement reason
Filter cloth	3 months	More dust on the filter cloth affects the air circulation in the incubator.
Big infusion seal	1~2 years	Decrease of air tightness due to damage or deformation
Small infusion seal	1~2 years	Decrease of air tightness due to damage or deformation
Swivel window cuff	1~2 years	Decrease of air tightness due to damage or deformation
Mattress	1~2 years	Use and cleaning affected by damage or deformation
Fan	3 years	Affect air circulation performance
Rotary Damper	2~3 years	Affect the rotation damping effect of the gate

Oxygen sensor	Depending on the operating conditions, its service environment (ambient temperature, oxygen concentration) has a great impact on its life.	Abnormal oxygen control due to sensor life
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9.4 Replace filter cloth

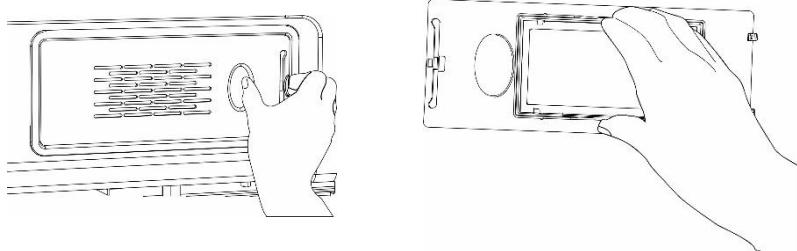
Generally, the filter cloth shall be replaced once every three months. Its dirty degree changes with the degree of environmental pollution and the frequency of use. The filter cloth shall be inspected regularly. If it is found to be discolored, it shall be replaced immediately.

The replacement method is as follows:

(1) As shown in the figure, facing the machine, the filter device is placed at the right rear of the machine, and the air filter cover is removed by pinching the buckle.

(2) On the inner side of the air filter cover, the air filter cloth is pressed with a pressure block, the middle part of the pressure block is pinched by hand, the pressure block can be removed, the old filter cloth is removed, the soft cloth soaked with disinfectant is used, after fully wring, all surfaces of the filter device are wiped.

(3) Replace the filter cloth with a new one, record the replacement date of the filter cloth and reset the filter device.



9.5 Replace oxygen battery and oxygen sensor



Attention

Oxygen sensor is a kind of sealing device containing potassium hydroxide electrolyte. If the sensor is damaged when falling, the electrolyte may leak, etc. If electrolytes come into contact with your skin or clothing, rinse with plenty of water.

Replace the oxygen battery and oxygen sensor as follows:

- (1) Pull out sensor box
- (2) Press the elastic pieces on both sides of the sensor box, and pull it out.
- (3) Unscrew the screws on the cover plate with a screwdriver and take it out.
- (4) Screw in oxygen sensor.
- (5) Turn the two oxygen sensor clockwise.
- (6) Connect the oxygen sensor signal line

Pull out the oxygen sensor connecting wire in the information transfer box and connect two oxygen sensors respectively, then put the cover plate back into the information transfer box, screw it down with two screws, and then push the information transfer box into the corresponding position of the constant temperature hood.



The medical institution shall be responsible for the proper disposal of the main body, overdue core parts and disposable articles in accordance with the relevant laws and regulations on waste disposal.

Comply with relevant laws and regulations, properly handle batteries and oxygen sensors.

10.Waste disposal

Medical institutions are responsible for properly disposing of the main body, overdue old parts and disposable items in accordance with relevant waste disposal laws and regulations. Comply with relevant laws and regulations, and properly dispose of batteries and oxygen sensors.

11.Alarm system

In order to ensure that the incubator provides a suitable temperature and humidity environment for children, in the process of equipment use and maintenance, the user can be informed in time in case of failure, so that it can take effective measures quickly to reduce and avoid harm to patients.

Description of alarm status

No.	Alarm name	Alarm condition	Alarm indication	Alarm sound characteristics	Alarm indicator LED	Alarm priority	Alarm trigger interval	Maximum alarm response time	Silent function	Steps to eliminate noise
1	Air temperature	The set air temperature is less than 37.0°C and the real-time air temperature is greater than 37.8°C, the set air temperature is greater than 37.0°C and the real-time air temperature is greater than 39.8°C	Over TEMP	Beep Beep Beep -- Beep Beep	1.4-2.8HZ Red indicator light flashes	high priority	Alarm period 2.5S-15S	No more than 15S	Yes	After silence, press the silence button again
2	oxygen concentration exceeds 60%	oxygen concentration exceeds 60%		Beep Beep Beep -- Beep Beep	1.4-2.8HZ Red indicator light flashes	high priority	Alarm period 2.5S-15S	No more than 15S	Yes	After silence, press the silence button again
3	Low SpO2	Real-time SpO2 value is lower than the set lower limit	SPO2 Low	Beep Beep Beep -- Beep Beep	1.4-2.8HZ Red indicator light flashes	high priority	Alarm period 2.5S-15S	No more than 15S	Yes	After silence, press the silence button again
4	High SpO2	The real time SpO2 value is higher than the set upper limit	SPO2 High	Beep Beep Beep -- Beep Beep	1.4-2.8HZ Red indicator light flashes	high priority	Alarm period 2.5S-15S	No more than 15S	Yes	After silence, press the silence button again
5	Low pulse rate	The real-time pulse rate value is lower than the set lower limit	PR Low	Beep Beep Beep -- Beep Beep	1.4-2.8HZ Red indicator light flashes	high priority	Alarm period 2.5S-15S	No more than 15S	Yes	After silence, press the silence button again

6	High pulse rate	The real-time pulse rate value is higher than the set upper limit	PR High	Beep Beep Beep -- Beep Beep	1.4-2.8HZ Red indicator light flashes	high priority	Alarm period 2.5S-15S	No more than 15S	Yes	After silence, press the silence button again
7	Skin temperature sensor 1	Sensor active/short circuit in skin control mode	O1# SKIN TEMP SENSOR ERR	Beep Beep Beep--	1.4-2.8HZ Red indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
8	Skin temperature sensor 2	Sensor active/short circuit in skin control mode	O2# SKIN TEMP SENSOR ERR	Beep Beep Beep--	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
9	fan 1	Blocking	Fan 1 fault	Beep Beep Beep--	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
10	fan 2	Blocking	Fan 2 fault	Beep Beep Beep--	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
11	Oxygen deviation	The oxygen deviation display is ± 5% after constant	Oxy DEV	Beep Beep Beep--	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
12	Oxygen sensor	Oxygen sensor display failure, oxygen sensor display failure		Beep Beep Beep--	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again

13	Oxygen control sensor	Oxygen sensor display failure, oxygen sensor display failure		Beep Beep Beep-	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
14	Air temperature exceeds deviation	Once the temperature is constant, the real-time air temperature deviates from the set temperature value by +3.0°C	WATER TEMP DEV	Beep Beep Beep-	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
15	Oxygen failure alarm	Enter oxygen does not reach the set value within the specified time		Beep Beep Beep-	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
16	Skin temperature sensor 1 does not stick	In skin temperature control mode, skin temperature sensor 1 does not touch the skin		Beep Beep Beep-	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
17	Skin temperature sensor 2 does not stick	In skin temperature control mode, the skin temperature sensor 2 does not touch the skin		Beep Beep Beep-	0.4-0.8HZ yellow indicator light flashes	Medium priority	Alarm period 2.5S-30S	No more than 30S	Yes	After silence, press the silence button again
18	Air temperature deviation (low)	Once the temperature is constant, the real-time air temperature is off from the set	WATER TEMP DEV	Beep Beep —	Maintain brightness	Low priority	>15S	---	Yes	After silence, press the silence button again

		temperature value by +3.0°C								
19	Humidity value deviation (height)	Humidity deviation after constant humidity is positive 15%	RH DEV	Beep Beep —	Maintain brightness	Low priority	>15S	---	Yes	After silence, press the silence button again
20	Humidity value deviation (low)	Humidity deviation after constant humidity is positive 15%	RH DEV	Beep Beep —	Maintain brightness	Low priority	>15S	---	Yes	After silence, press the silence button again
21	Humidity water tank	When the humidity control is turned on, the water tank water level is low or not installed in place	Lack of water	Beep Beep —	Maintain brightness	Low priority	>15S	---	Yes	After silence, press the silence button again
22	Communication on command	No response when communicating with the underlying hardware		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
23	Sensor box communication failure	Error in sensor box		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
24	The sensor box is not in place	The specified position where the sensor box is not installed		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
25	Air temperature protection	Cut off heating when the temperature reaches the limit		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the

	measures above temperature 1	value of more than temperature 1								silence button again
26	Air temperature protection measures above temperature 2	Cut off heating when the temperature reaches the limit value of more than temperature 2		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
27	Severe sensor failure	Sensor failure	ERR SENSOR	Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
28	Weight exceeds limit	Overweight or sensor failure	Exceeds the limit	Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
29	Heating circuit failure	Heater not working		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
30	The blood oxygen probe is not working	The blood oxygen probe is not installed or is damaged after opening		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
31	The finger is not inserted into the SPO2 probe	The finger is not inserted into the SPO2 probe		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again

32	Oxygen battery voltage is too low	The oxygen battery voltage is lower than the set value		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
33	Oxygen controlled oxygen battery voltage is too low	The oxygen battery voltage is lower than the set value		Beep --	Maintain brightness	always	>15S	---	Yes	After silence, press the silence button again
34	Skin temperature sensor 1 exceeds 38.5°C	Appears when skin temperature 1 exceeds 38.5°C		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
35	Skin temperature sensor 2 exceeds 38.5°C	Appears when the skin temperature 2 exceeds 38.5°C		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
36	The temperature of the phototherapy unit is too high	Phototherapy temperature is greater than 60°C when blue light is illuminated		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again
37	Humidification circuit failure alarm	Humidification does not work after turning on humidification		Beep --	Maintain brightness	remind	>15S	---	Yes	After silence, press the silence button again

12.The removing of the common troubles

Trouble phenomenon	Reason analysis	Method of dealing with
Alarm for power failure	1. Outlet keep in touch kind 2. The power fuse fuses 3. The electric wire netting cuts out	1. Repair or change outlet 2. Change the fuse 3. Close the switch
Alarm for over Temp	1.The damage of the temp sensor	1.Change the temp sensor
Alarm for temp deviation	1. Start the machine temperature on the low side 2. In the case just, constant temperature put on the front door turn on time too long 3. Under warm higher situation of the case, set up lower temperature	1. Reset, wait 2. Close the door, reset and wait 3. Reset, wait
Alarm for sensor failure	1. Not insert the skin temp sensor 2. Has been inserted. The sensor plug comes off or connection bad 3. Sensor is damaged	1. Insert it 2. Check the plug and the connection. 3. Change the sensor
The display screen of temperature is not bright	Sensor not insert or open circuit	Check sensor and connect it well

Humidity temp can't rise	1. Water in tank too few 2. Humidity heat tube failure 3. Humidity already balance	1. Add enough distilled water in tank 2. Check the heat tube, remove the failure 3. Adjust humidity rotary knob
The heater indicator is on, but temp has not been rising all the time	The heater is damaged Relay connect not well	Change the heater Change relay
The operation window is not tightly closed	Operation window seal is incorrectly installed	1. Check the installation direction of the operation window. The big end is installed inside the door. 2. Check whether the internal boss of the operating window seal ring is aligned with the gate groove.

13.Quality Commitment and Disclaimer

13.1 Quality Commitment

If the products described in this manual are defective in materials and workmanship, they are guaranteed for one year from the date of leaving the factory, except in the following cases:

1. All consumables and disposable items are only guaranteed free of charge for defects in delivery.
2. Confirm that it is normal maintenance and not included in the 1-year warranty period.

During the warranty period, in addition to those listed above, any defective parts can be replaced free of charge for users.

13.2 Disclaimer

If the following conditions are found, the quality commitments proposed above are invalid, and the company does not assume any responsibility for the safety, reliability and performance of the equipment:

Failure or damage caused by the user not maintaining the product in accordance with the method specified in this manual.
Failure or damage caused by user's wrong operation.
Failure or damage caused by not using the parts designated by our company during maintenance or modification.
Failure or damage caused by purchase through unauthorized dealers or repairers.
Failure or damage caused by repairs by unauthorized repairers.
Failure or damage caused by accidents such as force majeure

14. Guidance and declaration-electromagnetic emissions

13.1 Electromagnetic emission

Guidance and declaration-electromagnetic emissions			
Emission test	Launch experiment	Compliance	Electromagnetic Environment-Guide
GB 48243	Radio frequency emission	GROUP 1	
GB 4824	Radio frequency emission	Class B	
GB 17625.1	Harmonic emission	Class A	
GB 17625.2	Voltage wave / flicker emission	Qualified	

13.2 Electromagnetic Immunity

Recommended separation distances between portable and mobile RF communications equipment and this equipment			
RF communications equipment and this equipment			
National standard	Immunity test	Coincidence level	Electromagnetic Environment Guide
GB/T 17626.2	Electrostatic discharge ± 6kV contact discharge ± 8kV air discharge	± 6kV contact discharge ± 8kV air discharge	The floor should be wood, concrete or tile, and if the floor is covered with synthetic material, the relative humidity should be at least 30%
GB/T 17626.4	Electrical fast transient burst ± 2kV to power line ± 1kV to input and output lines	± 2kV to power line ± 1kV to input and output lines	Grid power should be of the quality used in a typical commercial or hospital environment

GB/T 17626.5	surge ± 1kV wire-to-wire ± 2kV wire- to - ground	± 1kV wire-to-wire ± 2kV wire- to - ground	Grid power should be of the quality used in a typical commercial or hospital environment
GB/T 7626.11	Voltage sags, short interruptions, and voltage changes on power input lines ± 5% UT for 0.5 cycles (> 95% dip on UT) ± 40% UT for 5 cycles (On UT,> 60% sag) ± 70% UT for 25 cycles (> 30% dips on UT) ± 5% UT for 5s (On UT,> 95% dips)	<5% UT for 0.5 cycles (> 95% dip on UT) ± 40% UT for 5 cycles (On UT,> 60% sag) ± 70% UT for 25 cycles (> 30% dips on UT) ± 5% UT for 5s (On UT,> 95% dips)	Grid power should be of the quality used in a typical commercial or hospital environment. If the user of the baby incubator needs to run continuously during a power outage, it is recommended that the baby incubator be powered by an uninterruptible power supply or battery
GB/T 17626.8	3A/m	3A/m	The power frequency magnetic field

			should have the power frequency magnetic field level characteristic of a typical place in a typical commercial or hospital environment.
<p>The BB-500 baby incubator is expected to be used in the electromagnetic environment specified below,</p> <p>The purchaser or user should guarantee its use in this electromagnetic environment</p>			
Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment-guidance
GB/T 17626.6	<p>3Vrms 150KHz-80MHz</p> <p>10V/m 150kHz~80MHz</p>	<p>3Vrms</p> <p>10Vrms</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of this equipment, including cables, than the recommended separation distance calculated from</p>

			<p>the equation applicable to the frequency of the transmitter</p> <p>Recommended separation distance</p> $d = \left[\frac{3.5}{3} \right] \sqrt{P}$  $d = \left[\frac{12}{10} \right] \sqrt{P}$ <p>80MHz ~ 800MHz</p> $d = \left[\frac{23}{10} \right] \sqrt{P}$ <p>800MHz ~ 2.5GHz</p> <p>Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation</p>
GB/T 17626.3	10V/m 80MHz~2.5GHz	10V/m	

distance in meters (m). Field strength from fixed RF transmitters, as determined by an electromagnetic site survey a, should be less than the compliance level in each frequency range b.

Interference may occur in the vicinity of equipment marked with the following symbol:



Note 1 At 80MHz and 800MHz, the higher frequency range applies.

Note 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a The engineering medical frequency bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz, 13.553 MHz to 13.567 MHz, 26.957 MHz to 27.283 MHz, and 40.66 MHz to 40.70 MHz

b The engineering medical band between 150kHz and 80MHz and the compliance level in the frequency range of 80MHz to 2.5GHz are used to

reduce the possibility of interference caused by mobile / portable communication devices being accidentally brought into the patient area. For this reason, an additional factor of 10/3 is used to calculate the recommended isolation distance of the transmitter in these frequency ranges.

c Field strength from fixed transmitters, such as base stations for radio telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, and electromagnetic site survey should be considered. If the measured field strength in the location in which this equipment is used exceeds the applicable RF compliance level above, this equipment should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating this equipment

d Over the frequency range 150KHz to 80MHz, field strength should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and this equipment

This equipment is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of this equipment can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and this equipment as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter(W)	Separation distance according to frequency of transmitter (m)			
	150kHz ~ 80MHz (Except Engineering)	150kHz~ 80MHz (Engineering)	80MHz~ 800MHz $d = 1.2\sqrt{P}$	800MHz~ 2.5GHz $d = 2.3\sqrt{P}$

	Medical Band $d = 1.2\sqrt{P}$	Medical Band $d = 1.2\sqrt{P}$		
0.01	0.12	0.12	0.12	0.23
0.1	0.37	0.38	0.38	0.73
1	1.2	1.2	1.2	2.3
10	3.7	3.8	3.8	7.3
100A	12	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people

NOTE 3 The additional factor of 10/3 is used to calculate the recommended isolation distance of the transmitter in the engineering medical frequency band between 150kHz and 80MHz and the frequency range of 80MHz ~ 2.5GHz to reduce the interference caused by the portable / mobile communication device being accidentally brought into the patient area Possibility.

NOTE 4 These guidelines may not be suitable for all situations. Electromagnetic propagation is affected by absorption and reflection from buildings, objects and people.

15.The case inventory

The accessories and spare parts listed in the list, please check when unpacking

No	NAME	COU NT	FULLY NOTE
1	Controller and base	1	
2	Infusion support and column slide	1	
3	Tray component, infusion hook component, spotlight component	1	
4	Baby scale assembly	1	
5	Upside LED phototherapy unit instrument	1	
6	Downside LED phototherapy unit instrument	1	
7	Gel mattress for blue light	1	
8	Skin temperature sensor 1	1	
9	Skin temperature sensor 2	1	
10	Heart rate and SPO2 probe	1	
11	Input power cord	1	
12	Fuse (F6AL 250V, φ5×20mm)	2	Spare
13	Air purification filter cloth (dedicated)	2	Spare
14	Certificate of quality	1	
15	Instruction Manual (including packing list and maintenance list)	1	

16.After-sale service

Dear Users:

Thank you for using the medical equipment products that made by our company; please keep this maintenance properly. Products such as

defective in quality or breaking down will go on guarantee or maintenance by this list.

The list of maintenance

Name: Baby incubator		Model: BB-500
Date of production:	Date of purchasing machine:	Type:
Applying company:		Postcode:
Address:		Tel:
Suggestion of applying company	Date:	

Handling suggestion	Date:
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The medical equipment products which our company produced, guarantee in one year, and maintain all its life (except being damaged artificially), if the products cannot reach technical indicator or other quality problems, please send "The list of maintenance" to the service department after sale of our company to solve according to the regulation.

17. Follow-up

Dear users:

The manual is suitable for the incubator of BB500 to install, use, wash and maintain, users should use the products according to this manual.

All relevant staff members should operate the products after reading manual carefully, if still having some puzzle, please contact with our company in order to offer detailed materials.

All this manual data, picture is according to the newest products while publishing, because of improving or other reason, there may be some differences between this manual's description and the real product, please forgive.

INFANT INCUBATOR

BB-500

MANUAL BOOK

